INTERNATIONAL DATA GROUP PUBLICATION ◆ VOLUME 11, NUMBER 27

IBM prepping client/server message engine

BY KEVIN FOGARTY

Somers, N.Y.

IBM plans to release by year end client/server workgroup software supporting electronic mail and group scheduling functions, as well as tight links to IBM's widely installed Professional Office System (PROFS) host-based messaging software.

The yet-to-be-named product will be positioned against other emerging workgroup messaging systems, including Microsoft Corp.'s recently announced Exchange and Lotus Development Corp.'s Notes. But IBM designed the software primarily to give customers of its mainframe messaging and message-enabled applications a client/server migration path, said Dick Sullivan, director of workgroup solutions for IBM's Software Solutions division here.

IBM also plans to package various existing document management and work flow applications into new products that will give users rich multimedia and data access capabilities. These offerings will work in See Messaging, page 49

From hosts to LANs and back again

IBM's new workgroup computing product:

- Integrates client/server scheduling and calendaring with PROFS and OfficeVision on MVS and OS/2.
- Integrates E-mail and scheduling directory information via X.500.
- Provides X.400 message transfer.
- Supports VIM and MAPI.
- Provides native Internet support with TCP/IP and SMTP.

Powerful new tool will aid Notes app builders

Lotus moving beyond API with new class libraries that will simplify development and integration of Notes applications.

BY ADAM GAFFIN

Developers who have struggled with the intricacies of the Lotus Notes application program interface (API) will get welcome relief with the next major version of the group collaboration software: bundled sets of API code that will ease development of Notes applica-

Lotus Development Corp. officials last week disclosed that the company is building a series of C++ class libraries — essentially packages of API calls that can be plunked into applications to support specific functions. Using these libraries, developers could build whole pieces of a Notes application using a single programming call, rather than the 15 or 20 calls now often required with the API.

That would make it easier for

users and third-party developers to tap into the power of the Notes API, especially for integrating Notes with external programs, and could spur development of more robust applications.

Availability of applications is an important issue for users that have invested in Notes, and Lotus

INSIDE

Page 8.

has taken a number of steps lately to open Notes up as an application platform.

Maria Watts, director of product management for Lotus' application development

products, said Lotus will likely release the class libraries sometime next year to coincide with the release of Notes Version 4.0.

Watts added that Lotus is looking at ways to use Notes itself as a repository for these class libraries. This would let teams of developers across an enterprise share and develop applications, she said.

Joseph Murphy, senior programmer and analyst at Baxter Healthcare, Inc.'s U.S. distribution division in McGaw Park, Ill., welcomed the idea.

applications with Notes' macro language and wants something that offers more power Lotus reveals plans and flexibility. But for Notes-based Murphy said he is Internet servers. wary of using the API, which has some 200 programming calls and which many develop-

He has developed a few

ers find difficult or cumbersome to work with. The API "is really your last resort" when developing a Notes application, agreed James Ford, an

associate with Connexus Consult-See Notes, page 49

All eyes on Senate after House OKs reform bills

Countdown to reform

Key provisions of the House

bill passed last week: RBHCs can gradually enter long-distance market, starting

with intrastate service. RBHCs can offer interstate commercial mobile, video or

Aformation services. Cable companies and IXCs can provide local telephone service.
RBHCs can provide cable

FCC to establish new universal service funding mechanism.
 RBHCs are allowed to

Now legislation must: Pass the Senate by the mid-

manufacture equipment

August recess. Clear a House-Senate

conference committee Pass both houses in modified form.

BY BILL BURCH AND DAVID ROHDE

Following a landslide victory in the House last week, a major telecommunications reform bill now faces a tough Senate battle that users on either side of the issue could help to sway.

The House of Representatives passed two bills, which were later combined, that would essentially rewrite the Consent Decree governing the 1984 breakup of AT&T. If the legislation becomes law, the regional Bell holding companies would gradually be allowed to offer long-distance services and manufacture equipment, while interexchange carriers would be free to compete in the local loop.

At this point, user lobbying efforts could mean the difference, said Jeff Linder, who tracks the legislation for the

See House, page 48

HIGH-SPEED NETS

Start-up throws the switch on LANs, ATM

BY MICHAEL COONEY AND SKIP MACASKILL

Mountain View, Calif.

Centillion Networks, Inc. next week will dive into the growing LAN switch market with a versatile offering that has an ATM backplane, as well as token-ring and Fiber Distributed Data Interface ports.

According to several sources, the SpeedSwitch 100 is designed to sit on an FDDI backbone and interconnect multiple token rings, while also providing access to other SpeedSwitches or an Asynchronous Transfer Mode net via a high-speed interface.

Company officials could not be reached by press

Centillion (originally called LANSpeed, Inc.) was established last September by former employees from Cisco Systems, Inc., Grand Junction Networks, Inc. and Network Equipment Technologies, Inc.

The start-up is taking aim at a potentially large

market, observers said.

"The demand for token-ring switching is growing rapidly," said Val Sribar, senior research analyst at META Group, Inc., a consultancy in Westport, Conn. "There is a significant amount of token ring installed,

See LANs, ATM, page 6

TWA gets Sprint to bend rules in big 800 contract

Kansas City, Mo.

Trans World Airlines, Inc. will save an estimated \$1.5 million a year on inbound calls under a groundbreaking contract with Sprint Corp. that guarantees no extra charges when 800 calls are bounced from one TWA reservation center to another.

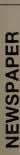
By giving TWA a flat rate for all 800 calls, regardless of mileage or time

of day, Sprint is guaranteeing that the airline can use call distribution systems to move calls to any available agent without incurring large additional fees.

The four-year contract with Sprint — officially valued at \$5 million a year - will save TWA 30% compared to what it would have paid with AT&T, said Gerry Doherty, TWA's vice president for Airline Information Services, based here.

TWA's previous AT&T contract imposed additional mileage charges when a call originating relatively near one call center was transferred to a distant center, Doherty said. That kind of call transfer is com-

See 800 contract, page 6



100

Briefs

Has it been that long? Founders of the Advanced Research Projects Agency Network (ARPANET), the forerunner to the great electronic meeting place now called the Internet, will actually meet in person when they celebrate ARPANET's 25th anniversary on Sept. 10 in Boston.

CA, ICL form pact. Computer Associates International, Inc. (CA) and London-based hardware and systems management software vendor ICL last week announced the signing of a joint marketing and technology-sharing agreement. The pact will put CA's recently acquired Ingres database on ICL's massively parallel processors and let CA build ICL systems management technology into its Unicenter Unix systems management product. ICL will run Unicenter on all of its servers. CA will include ICL's security, software distribution and groupware applications with its menu of options for Unicenter customers. Bolt Beranek and Newman, Inc. (BBN) of Cambridge, Mass., a key contractor on the ARPANET project, will host a dinner honoring ARPANET veterans, whose work led to such innovations as electronic mail and packet switching.

BBN: (617) 873-6113.

Documenting work flow. Saros Corp. and Action Technologies, Inc. said last week that they had released a software bridge to connect Saros' Mezzanine document management software with Action's work flow application. The bridging software will be bundled with Action software for no additional charge.

Action: (510) 521-6190.

Faster, faster, faster. Informix Software, Inc. last week said that it will show that its Informix OnLine Dynamic Server 7.0 database management system is built for speed. It will port the system to symmetric multiprocessing hardware platforms from the following vendors by the fourth quarter: AT&T Global Information Solutions, Data General, Inc., Digital Equipment Corp., Hewlett-Packard Co., IBM, Motorola, Inc., Pyramid Technology Corp., Siemens/Nixdorf Informationsysteme, Sun Microsystems, Inc. and Unisys Corp.

Informix: (415) 926-6300.

Transaction action. Sybase, Inc. last week said that it has begun shipping the XA-Library for CICS/6000, which lets users develop distributed applications that include IBM's CICS application programming interface. XA-Library for CICS/6000 costs from \$940 to \$34,550.

Sybase will provide similar support for Transarc Corp.'s Encina Monitor and AT&T Global Information Solutions' Top End monitor in the third quarter and Novell, Inc.'s Tuxedo Enterprise Transaction Processing System in the fourth quarter.

Sybase: (510) 922-3500.

Notes-worthy news. Feeling left out of the loop? Well, Lotus Development Corp. last week announced a program for keeping developers up-todate on Notes and related products. For \$495, you get a CD-ROM based tool kit with application program interfaces and other tools for Lotus products, updated quarterly; access to Lotus databases; technical information; and copies of all Lotus press releases.

Lotus: (800) 782-7876.

Married to their jobs. Talk about dedicated. Cassandra Lehman and Christopher Thorne did not even take any time off to get married, they did it at the Symantec Corp. booth on the floor of PC Expo in New York last week. The judge stayed home in Santa Clara, Calif., and married the couple via a videoconference link. Guests gathered at both locations. The couple said the virtual wedding matches their high-tech lifestyle. He is an assistant computer arts professor at San Jose State University, she is president of the audiovisual firm Symantec uses to set up its audiovisual effects at its trade show booths.

Contacts

ADDRESS: Network World, 161 Worcester Rd., Framingham, MA 01701. PHONE: (508) 875-6400; FAX: (508) 820-3467; INTERNET: network@world.std.com.; BBS: Interact with other readers: download free software, submit letters to the editor, leave news tips, change of address requests or hunt for jobs by using your IBM, Apple or other computer to dial into the BBS at speeds up to 9.6K bit/sec by dialing (508) 620-1178 or (508) 620-1160. READER ADVOCACY FORCE (R.A.F.) HOT-LINE: Contact us with story tips about pressing user issues, (800) 622-1108, Ext. 487; NETWORK HELP DESK: Contact Dana Thorat via any of the above means.

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IBM hopes to hit the jackpot with its new ATM networking lineup. Page 13.

Users report big savings in telecommunications costs with new high-speed modems. Page 13.

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Proteon reshuffles the deck as the company announces layoffs and a new CEO. Page 19.

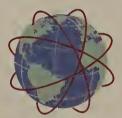


GTE becomes Banyan's largest customer as the two firms signed a multimillion-dollar contract. Page 19.

GLOBAL SERVICES

FEATURE

This week's Buyer's Guide to Internet access providers uncovers a market in mayhem, as national carriers horn in at a time when regional and local outfits appear vulnerable.



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Bells do better with the ISDN installation, but LECs still lag in sales, support and training. Page 21.

SkyTel to fly in paging to local level, reducing costs for "locally mobile users." Page 21.

CLIENT/SERVER APPLICATIONS

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D&B Software's new

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HELP desk Network

Network World tracks down answers to your questions regarding products, services, technologies or disputes with vendors. Please submit questions to Dana Thorat at (800) 622-1108, via fax at (508) 820-3467, via the Internet at djt@world.std.com or via CompuServe at 73244,2673.

Do you know of any server software for backing up a Novell, Inc. NetWare network? I plan to use It with a 4mm digital audio tape (DAT) drive attached to a Small Computer System Interface (SCSI) controller.

Tony Abo, Los Angeles

Here are several server-based products available for backing up a NetWare local-area network that made it in The Short List of a recent Buyer's Guide:

Cheyenne Software, Inc.'s ARCserve for Net-Ware 5.01 is a server-based backup and restore Net-Ware Loadable Module (NLM) for NetWare 3.11 or higher networks. ARCserve provides unattended backup and scheduling that can be customized through an automated script generator. It works with 4mm DAT, 8mm tape drive, Quarter Inch Cartridge (QIC), Digital Linear Tape (DLT) and writeonce and rewritable optical devices. ARCserve

prices range from \$1,695 for a 50-user license to \$9,295 for a 1,000-user license. For more product information, call Cheyenne at (800) 243-9462.

Palindrome Corp.'s Network Archivist is a server-based NLM for automated backup and storage management for NetWare LANs. It supports QIC, 4mm DAT, 8mm, DLT, rewriteable optical, write once, read many times (WORM), tape autoloaders and optical jukeboxes. Network Archivist backs up all data on one server or on any number of 2.X, 3.X and 4.X NetWare servers. It also supports Novell's Storage Management System specification. Prices range from \$795 to \$1,695. For more information, call Palindrome at (708) 505-3300.

Legato Systems, Inc.'s NetWorker 3.0 is an NLM that runs on NetWare 3.11, 3.12 and 4.X servers. NetWorker is a network data storage management product that provides full backup, archiving and recovery of individual files, directories, and entire server volumes. NetWorker supports 8mm, 4mm DAT, QIC, DLT, optical and robotic storage devices. Concurrent device support allows users to write to multiple storage devices simultaneously. Other features include: centralized administration; unat-

See Help desk, page 37

WilTel's WilPak accommodates business applications such as document sharing, sales and order entry, customer service, traffic aggregation, E-Mail, file transfer and payroll and accounting.

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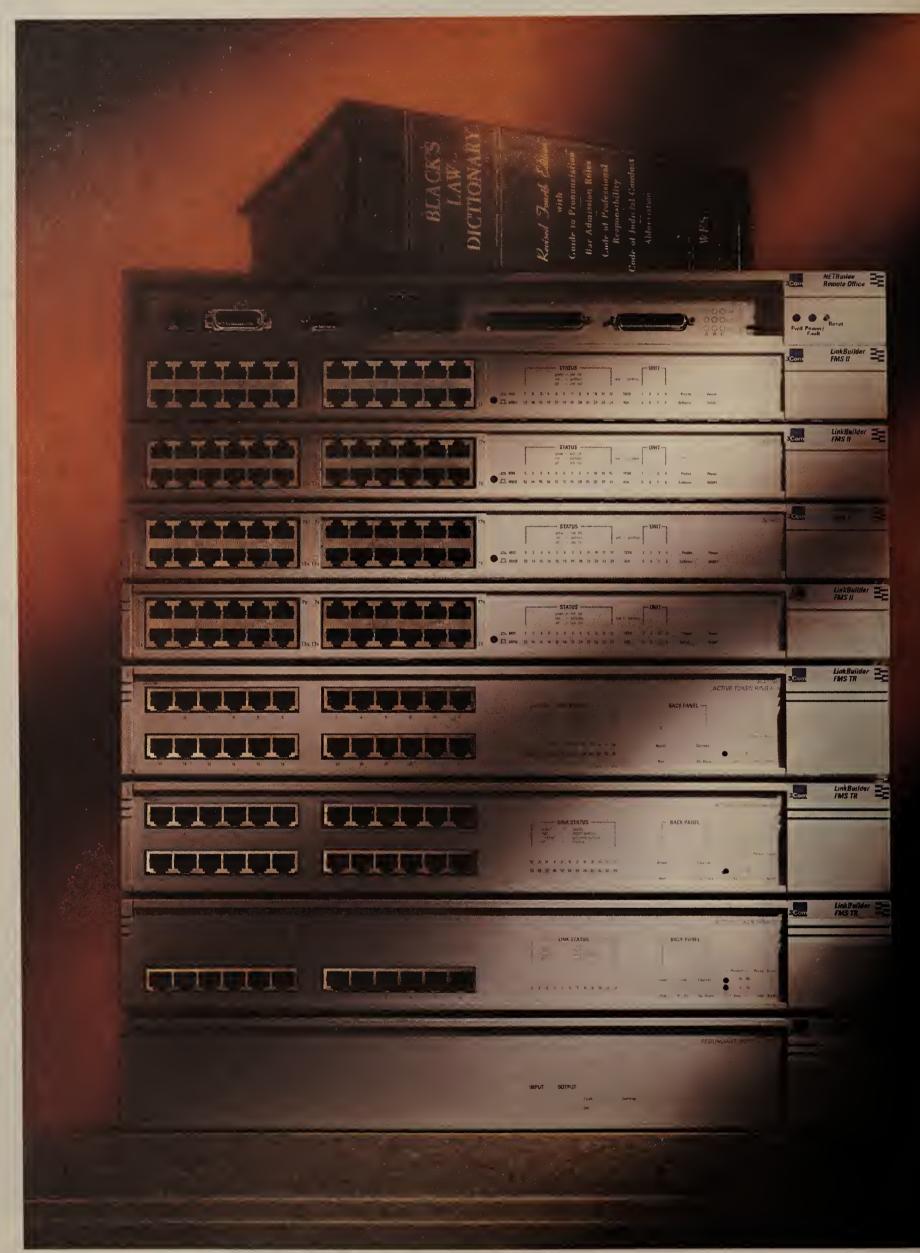
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Feds launch effort to overhaul government procurement rules

BY ELLEN MESSMER

Washington, D.C.

Federal technology managers last week launched a crusade to cut the red tape and rules they claim are major obstacles in multimilliondollar government network projects.

The Federal Information Technology Acquisition Improvement Team, representing both civilian and defense agencies, said in a report that the rigid rules in use today derail communications with vendors, while the existing contract protest process can tie up massive network procurements for years.

Release of the report is the latest development this summer of discontent for government technology managers, who are rebelling against federal rules. The Federal Internetworking Requirements Panel issued a report last month calling for an end to the mandatory data networking purchasing requirements in the Government Open Systems Interconnection Profile rules.

And last week, Secretary of Defense William Perry ordered an end to military-unique specifications on everything from nuclear systems to food, but told the deputy secretary of defense to mandate that all industry suppliers and government agencies use electronic management systems to share information.

A key concern cited in the federal technology managers' report issued last week was the contract protest process.

"There's a sense of frustration in all our agencies about the protest process, that it's being gamed," said Renato DiPentima, deputy commissioner for systems at the Social Security Administration and chairman of the acquisition team that was set up last year by Vice President Al Gore as part of his publicized effort to streamline government operations.

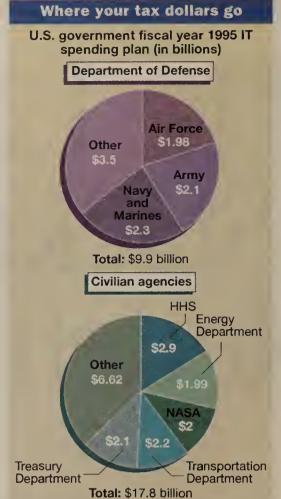
To discourage frivolous protests, DiPentima said vendors should have to pay the government's costs if the protest is overturned. "But if we lose, we pay for your costs," he

In its report titled "To Improve the Federal Information Technology Acquisition Process," the panel of federal technology managers recommended that a single forum for protest actions be selected to ease confusion. Currently, both the General Accounting Office and the General Services Administration (GSA) have offices for filing protest actions.

Few vendors would admit that their protest actions are frivolous, but they could hardly deny how effective legal protests are in delaying a competitor from winning a contract.

In one high-profile case, the Department of Energy's Asynchronous Transfer Mode network, which was awarded to Sprint Corp., has been held up for two years due to two different rounds of protests from AT&T and MCI Communications Corp.

The report said nonbinding arbitration



SOURCE: ELECTRONIC INDUSTRIES ASSOCIATION, WASHINGTON, D.C.

should be instituted to resolve conflicts, while protest actions should have tight deadlines for resolution.

A key part of the federal group's reform plan is to get the White House and Congress to agree to a downgrading of the mandatory procurement rules to mere guidelines.

These rules make it almost impossible for agency managers to communicate with ven-

dors once a request for proposal has been issued. The lack of dialogue is a problem in software development since competing vendors often may not really understand what the customer wants.

"We'll analyze the RFP and find you made the right assumption there, a wrong one here,' said an Air Force procurement officer. "So we often pick the least wrong offer in the competi-

Agency technology managers also want the GSA to forfeit its power to supervise their purchasing decisions and instead become a center of expertise and advice. That idea was embraced by the GSA. "I'm committed to implementing the requirements in this report," said Joe Thompson, GSA commissioner.

The report outlines dozens of reform ideas. It suggests that agency managers might want to separate out "commodity" hardware such as computers when planning new systems purchases so the hardware could be obtained more quickly while software is undergoing development and evaluation.

The Clinton administration is likely to back many of the changes, though it may be tougher to get Congress to acquiesce.

No agency would benefit more than the Department of Health and Human Services (HHS), which will have \$2.9 billion to spend on information technology in fiscal year 1995, more than any other civilian agency (see graphic).

The largest single purchase at the HHS will likely be a giant \$1 billion local net and workstation contract the Social Security Administration will put out for bid next month.

Comments?

See "Contacts" box on page 2.

Continued from page 1

mon in the airline industry, especially dur-

"It becomes harder and harder [to oper-

of TWA's 800 numbers from AT&T, Sprint becomes the first carrier to win a major airline's entire business under after portability took effect on

"With MCI, it's considered two calls," Briere said

"They would send it along but charge for the extra leg," he added.

Ironically, AT&T has the most sophisticated network-based call routing system, Briere said. Instead of sending each call into a particular call center, where the automatic call distributor (ACD) decides whether it can handle the call, AT&T uses ''look-ahead routing" to hold the call at the origination point until it finds an available agent at any one of several call centers.

But AT&T generally has mileage-based inbound calling plans. Only a couple of the carrier's Tariff 12 options offer postalized 800 rates, said an AT&T spokesman, although they are starting to appear in recent filings of the company's contract tariffs. So even look-ahead routing can result in greater charges, depending on where the call is routed to.

This cost TWA dearly in 1992, when it was in the process of closing its New York reservations center and large volumes of traffic to its new St. Louis center.

"That cost us \$1 million," Doherty said. AT&T does not come up totally empty in the deal, however.

For the St. Louis reservation center, TWA chose AT&T's ACD over the Galaxy ACDs from Rockwell Switching Systems Division, which it uses in its other reservations centers.

The decision continues a recent trend of call centers choosing ACDs from big PBX manufacturers - particularly AT&T instead of traditional stand-alone ACDs such as Galaxies (NW, June 6, page 9). 2

LANs, ATM

Continued from page 1

and most of it is being used for terminal emula-

As more LAN-based applications emerge in that area, however, traffic as well as bandwidth

problems will crop up and switching will become increasingly important."

The six-slot, chassis-based switch, which will support as many as 24 token-ring networks, will be based on a multiprocessing architecture centered around a gigabit-speed ATM backplane.

Each interface module will be equipped with a custom application-specific integrated circuit chip developed by Centillion that will act as a high-speed switching engine. The chip will allow the module to switch traffic across a dedicated link between any two token rings it sup-

ports, keeping unnecessary traffic off the back-

For traffic traversing two different modules, it will first be converted from token-ring frames to Asynchronous Transfer Mode 53-byte cells on the incoming module and then switched across the ATM backplane to the outgoing module. The traffic will then be reconverted into token-ring

The sources said Centillion claims that Speed-Switch — which will feature dual power supplies and hot-swappable modules, will provide more than 500,000 packet/sec of aggregate throughput when fully loaded.

Users familiar with SpeedSwitch were impressed.

"We think Centillion will offer a wellrounded, aggressively priced token-ring switch that will compete very well with the next-generation products coming from Cabletron, Chipcom and SynOptics," said Graham Morrison, project leader for network design at Blue Cross/Blue

Shield of Connecticut. Morrison has ex- pressed interest in testing a beta version of SpeedSwitch when it becomes available later this year.

While some major players are actively pushing token-ring switching — Cabletron Systems, Inc., Standard Microsystems, Inc. and Madge Networks, Inc., for example — Centillion could become a market leader, Morrison said.

"We think most vendors have ignored the token-ring switching market in favor of Ethernet switching, but Centillion is going to change that," he added. "We also think the pricing of the device will stand the

market on its ear."

"We think most

vendors have

ignored the

token-ring

switching

market in favor

of Ethernet

switching, but

Centillion is

going to change

that," said

Graham

Morrison.

Analysts agreed that Centillion could be for real.

"Users need a large multiport switching device for a good price, and it sounds like Centillion has accomplished that," explained Fred McClimans, a principal at Decisis, Inc., a consultancy in Herndon, Va. "IBM and other vendors have hinted around about getting into this market, but no one really has done it in a powerful

SpeedSwitch will be ready by the end of the year. Pricing information for the switch was unavailable. Z

800 contract

ing fare promotions. Since it happens automatically, airlines have little control over the costs involved.

ate] in a mileage-based environment, because it's hard-

er to predict

where the call is

going to go,"

explained Dan-

iel Briere, presi-

dent of Tele-

Choice, Inc., a

consulting firm

based in Vero-

and MCI Com-

moving to flat —

or postalized -

800 rates on

their negotiated

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Both Sprint

have

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been

By taking over all 800 portability --more than a year May 1, 1993.



said Ellen Block, partner in the Washington, D.C. law firm of Levine, Lagapa and Block.

But in a similar situation of calls bouncing among call centers, an MCI customer even one with a postalized 800 contract would still pay extra if the call wound up farther away.

Start-up jumps into ATM mart with aggressive pricing

To highlight rollout with new switch architecture.

BY SKIP MACASKILL

Connectware, Inc. last week launched an allout assault on the emerging Asynchronous Transfer Mode (ATM) market with the rollout of new products priced well below existing ATM offer-

The start-up, a subsidiary of electrical connector giant AMP, has compiled technology from a variety of sources and fashioned it into a product set that includes chips, network interface cards (NIC), workgroup switches and an enterprise switch.

Prices for Connectware's Cellerity products undercut actual and announced prices for ATM cards and switches from vendors such as Fore Systems, Inc., Newbridge Networks, Inc. and SynOptics Communications, Inc. by 30% to 60% (see

According to Kent Savage, director of worldwide marketing for Connectware, the company can keep its GRAPHIC BY TERRI MITCHELL prices down by basing its products

on single chips and by tapping into AMP's extensive manufacturing base.

'A single-chip solution for [packet-to-cell] segmentation and reassembly on both our cards and switches allows us to keep costs down since we're not overpopulating motherboards with expensive silicon," he said. "Utilizing the manufacturing and worldwide distribution channels of AMP allows us to initiate further cost savings."

Connectware's reign as king of slashed prices may be a short one, however, according to Jennifer Pigg, program director at The Yankee Group, a Boston consultancy.

Up and coming ATM market forecast (in millions) through 1996 ATM NICs \$456 ATM workgroup 1996 1994 SOURCE: THE YANKEE GROUP, BOSTON

"By the time Connectware delivers product in the first and second quarter next year, it will not be the only company at those price points," she said. "The pricing would be revolutionary if product was out in July, but by next year, more established players will be at the same per-connection costs."

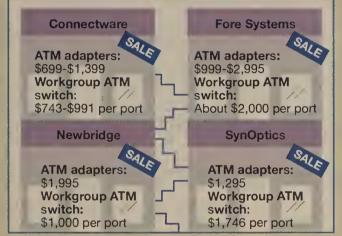
CELLERITY WATCHING

The Cellerity products are based on a custom application-specific integrated circuit chip that uses VLSI Technology, Inc.'s CMOS technology. The Connectware chip contains a segmentation and reassembly en-gine, a Reduced Instruction Set Computing-based microprocessor and a 32bit direct memory access bus controller.

The chip will reside on Connectware's line of ATM NICs, which will be designed to connect high-end workstations and servers to Connectware ATM switches as well as devices from other

Strolling through the ATM mall

Connectware's ATM product pricing undercuts the market leaders.



The NICs initially will come in 100M and 155M bit/sec multimode fiber-based versions for Extended Industry Standard Architecture, TurboChannel, and SBus workstations and servers. Category 5 un-shielded twisted-pair versions will be available in the future.

The company also unveiled the Cellerity ATM Workgroup Hub, a fixed-port ATM switch that will be available in a fiber-based 12-port version and a 16-port model that supports Category 5 unshielded twisted-pair connections. The switches, which will support either 100M or 155M bit/sec ATM interfaces, will provide con-

> nectivity among personal computers and servers, as well as to ATM networks.

> Users will be able to stack the switches in groups of up to four, providing a maximum of 48 fiber ports or 64 copper ports.

> The switch will feature a 4G bit/sec bus that links switch processors powering each port on a single hub or hub stack in a ring configura-

> The aggregate throughput of the ring will remain at 4G bit/sec no matter how large it gets, so a stack of four switches will only provide nonblocking capabilities for as many as 25 ports simultaneously. Each port will have a 150-cell buffer for data

and constant bit rate traffic, with additional buffer space available on a different portion of the switch's motherboard.

The hub's data throughput will be expanded to 8G bit/sec in a later release.

Connectware also said it will develop an enterprise-level ATM switch but declined to provide more details.

Beta releases of Cellerity products will be issued by year end, with general availability due in the first and second quarters of 1995.

©Connectware: (800) 357-0852.

Comments?

See "Contacts" box on page 2.

WordPerfect and Novell reveal revamped Office suite

BY KEVIN FOGARTY AND CARYN GILLOOLY

WordPerfect Corp. and Novell, Inc. last week announced their first product as a merged entity, revealing a suite of desktop and workgroup applications that show the companies have been more successful at integrating their marketing plans than their technology.

Robert Frankenberg, president and chief executive officer of Novell, Inc., intro-

duced PerfectOffice 3.0, formerly WordPerfect Office, at PC Expo in New York just days after finalizing the merger June 27.

PerfectOffice is a suite of integrated desktop and net applications that includes a database, spreadsheet, word processor and personal information manager. It also comes with the Symmetry workgroup application, which contains electronic mail, calen- FRANKENBERG daring, scheduling, work flow

and task management components, and a document sharing tool (see graphic).

Although PerfectOffice was hailed as "a great product" by analysts such as Sharon Durland at Aberdeen Group, Inc. in Boston, Durland and others agreed that Novell had little to do with its development.

As released, there is virtually no integration of PerfectOffice with NetWare, analysts said. Novell's presence in this announcement was to lend its name to help in getting users to think of WordPerfect as more than just a word processing company.

But even Novell's reputation as king of net operating systems may not prove enough to push an ambitious groupware, E-mail, desktop application suite such as

PerfectOffice, analysts said.

Novell is not considered by users to be a strategic software partner in the same way that Microsoft Corp., with its dominance in operating systems and desktop applications, is viewed, said Jack Karp, president of the Affinity Research Corp. consulting firm in Greenwich, Conn.

Others agreed: "Is Novell's branding enough to carry a suite through? I don't think so," said Frank Dzubeck, president of Communications Network Architects, a consulting firm in Washington, D.C.

A LITTLE TOO OPEN

PerfectOffice has both client and server pieces that run on NetWare servers as well as Unix-, OS/2- and DOS-based machines.

It not only supports NetWare's Global Message Handling Service (MHS) E-mail protocol, but also Microsoft's Messaging Application Programming Interface, Lotus Development Corp.'s Vendor Independent Messaging E-mail APIs, as well as the Transmission Control Protocol/Internet Protocol and X.400 protocols.

However, the product offers no ties into Novell's NetWare Directory Service (NDS) — the cornerstone of NetWare 4, which Novell has said is its strategic product and the platform on which all future product

enhancements will be based. The only access PerfectOffice provides to other Net-Ware services is a pull-down window built into PerfectOffice applications that lets users change servers, printers and other low-level configuration services.

"At this point, I don't see much integration with NetWare," said Ron Raes, assistant vice president of advanced technology at Weyerhaeuser Mortgage Co. in Woodland Hills, Calif. But there will be soon, he said.

When it is delivered later this summer,

the Sy-mmetry 4.1 piece will provide synchronization between user di-rectories in Symmetry and older versions of NetWare, so a change in a NetWare bindery will automatically be made in the Symmetry E-mail directory, Raes

But that is one application out of the entire suite, and that is not even for NetWare 4 customers. Although the company has stated its intention to include NDS and

Symmetry directory synchronization at some point, analysts said WordPerfect's going to have to provide a host of other significant NetWare ties if it wants to be successful in the application suite business.

For example, NetWare users might find the WordPerfect suite appealing if the company provided synchronization between NDS and all the Perfect Office applications to provide for centralized messaging, security and single logons. Users would also benefit from ties into Novell's NetWare Distributed Management Services for centralized application management.

Scott Nelson, director of product marketing for suites at WordPerfect, stressed that

Picture PerfectOffice

PerfectOffice Standard will include:

- WordPerfect word processor
- Quattro Pro spreadsheet
- ► WordPerfect Presentations graphics application
- InfoCentral personal information management tool
- Envoy workgroup and document publishing tool
- Symmetry client, a workgroup application with E-mail, calendaring and scheduling capabilities

PerfectOffice Professional will include all of the above applications, plus:

- Paradox relational database
- ► Visual AppBuilder, Novell's application development tool

PerfectOffice 3.0 is only the first release that came from the merger, and there are Net-Ware integration plans in the works, including ties to Novell net management, directory and software licensing services.

Although Novell is initially aiming PerfectOffice at the highly competitive market for desktop application suites, it will ultimately broaden its scope and begin to compete with the likes of Lotus Notes.

By integrating the workgroup applications with NetWare, WordPerfect will be offering users a low-cost alternative to Notes that is compatible with common protocols, said Ad Rietveld, president of WordPerfect, the Novell Applications Group.

PerfectOffice 3.0 is expected to be available this fall. Pricing was not available. **Z**

CDPD sits front and center at wireless show

CDPD Forum

agenda

Jointly deliver Version

cation by year end.

1.1 of CDPD specifi-

Produce a companion

details interoperability

document to CDPD

testing procedures.

Conduct CDPD 1.1

testing throughout

the third quarter.

Construct a product

certification lab.

specification that

BY JOANIE WEXLER

San Jose, Calif.

Advantage: CDPD.

That was the score at the close of the Wireless DataComm Spring 94 show here last week.

Vendors banded together in a big way - most notably via the formation of the interoperability-minded, 57-company CDPD Forum, Inc. - saying Cellular Digital Packet Data is the optimal near-term choice for bursty wireless data applications.

Carriers, modem makers and software companies consistently touted near-term CDPD advantages compared to a handful of emerging alternatives: anticipated lower cost to users, wider coverage, and the potential to unify voice and data communications on one user device and one network.

Users on the show floor appeared to be buying the arguments.

"What's the alternative?" asked Lee Nolan, senior telecommunica-

tions engineer at The Travelers Companies in Hartford, Conn. The insurer is seeking wireless remote access to electronic mail as well as a wireless option for a mobile vehicle-claims application.

"CDPD holds the best promise for data because of coverage and cost; the plant is basically already there," he said. It will take time and money to build alternative technologies up to the point where they have the near-ubiquitous reach of cellular.

These alternatives include data-only nets from RAM Mobile Data and ARDIS Co., the emerging National Wireless Network from Mtel Corp. and the new mesh-architecture metropolitan-area Ricochet network from Metricom, Inc. (NW, June 20, page 38).

Ricochet drew crowds at the show mostly for its 77K bit/sec speed and low cost, which runs as low as \$3 per

month. However, it is being rolled out city by

city.
"The longer something takes to deploy, the more people fall off the bandwagon," Nolan said.

Membership in the new forum ranges from start-up Wireless Connect, Inc. in Santa Clara, Calif., to all cellular carriers and Goliaths such as AT&T, Communications Corp., Sprint Cellular Co. and IBM. Wireless Connect said at the show that it is shipping its first prod-

uct, Desktop CDPD, a developers' tool for Unixware platforms that lets programmers emulate an entire CDPD network to test CDPD applications.

"I gambled my dollar on CDPD because of its nearly ubiquitous U.S. coverage and probable price benefits," said Glenn Patrick, chief executive officer of Wireless Connect.

Companies such as RAM Mobile and ARDIS don't have as wide a reach as the analog cellular networks that will be upgraded and interconnected for CDPD. However, they already support packet data while the CDPD packetdata upgrade has barely begun, analysts pointed out.

As in the wired world, packet switching is more efficient than circuitswitched schemes for bursty applications such as file transfers. This is particularly important in the wireless world due to the high cost of transmis-

Several observers thought the formation of the CDPD Forum was not just a good idea; they asserted that the technology would likely not succeed with-

"Without this banding together of the vendors, we'd probably be looking at ISDN all over again, meaning we'd wind up with a tattered array of incompatible protocols," said Phil Evans, director of telecommunications at outsourcer Perot Systems, Inc. in Dallas.

"With no major cooperation effort, the window of opportunity for CDPD would pass by," said William Ablondi, vice president of mobile and personal computing at BIS Strategic Decisions in Norwell, Mass.

"These activities would have gone on without a trade association, but now a whole range of industry players will have a say in the specs," said Mike Cavanagh, acting executive director of the CDPD Forum and former head of the Electronic Messaging Association.

He said the huge number of companies that flocked to join the forum bring credibility to the technology. **Z**

Comments?

See "Contacts" box on page 2.

Lotus takes note of the Internet

BY ADAM GAFFIN

WORLD

Internet users could soon be connecting to Lotus Notes serv-

John Landry, chief technology officer for Lotus Development Corp., last week said the company is developing a suite of applications that would enable firms to offer information stored

in Notes to a potential market of millions of non-Notes users on the Internet. The information on Notes servers could be provided free of charge or at a cost to the recipient.

Speaking at the Database & Client/Server World here, he said a key component of this suite, InterNotes, will be an application that lets Notes serve as a back-end data repository for WorldWide Web servers.

He said this would let users take advantage of Notes' ability to collect and organize data, while using the graphical interfaces of WWW clients such as Mosaic. While the WWW has proven a good way to display information, it is very weak in tools for quickly collecting and organizing information.

Landry, who is heading up the Internet project, said Inter-Notes would let users translate Notes documents into WWW documents, which use Hyper-Text Markup Language. Lotus is still debating whether to do this through some sort of batch process or turn Notes servers into WWW servers that could accomplish this on the fly. The latter approach would let Notes users connect to servers across the Internet and see information in their own format, he

explained.

But using Notes on the Internet might require changes in its security features. In a typical Notes setup, end users need a public-key "certificate" on

their client to connect to a Notes server. That could be a problem on the Internet, where most efforts to develop information services rely on the ability of any net user to instantly connect and at least browse the system.

Duffy Mazan, a partner at Electric Press, Inc., a Reston, Va., firm that sets up Internet information services, said some firms, including his, are already using the Internet to deliver Notes-based information, typically to existing Notes clients.

Mazan said one way to deal with the security issue would be to install a Notes/WWW server outside a corporate fire wall and then not turn on its public-key security system. **Z**

the venture must win regulatory

approval from the FCC, the Depart-

ment of Justice and state regulatory

authorities. That's expected to take

merger with McCaw is undergoing

Similarly, AT&T's planned

Bell Atlantic and NYNEX to merge cellular units

BY ELLEN MESSMER

Washington, D.C.

The joint cellular service venture announced last week by Bell Atlantic Corp. and NYNEX Corp. promises to be a powerful new player in the wireless industry, but the companies have plenty of work ahead, joining their technically diverse networks and integrating cellular and future PCS offerings.

The newly proposed unit, which has yet to be named, will combine the vast cellular operations of the regional Bell holding companies, which have a combined population of around 55 million potential cus-

The venture is aimed at improving current service while giving the carriers the clout to expand into nationwide personal communications service in the future.

The subsidiary will integrate the two cellular networks for seamless roaming and handoff of voice and data calls.

The alliance is one of the largest business ventures ever between two Bell companies, creating the No. 2 cellular carrier in the country and raising a significant challenge to the No. 1 player, McCaw Cellular Communications, Inc., which is being purchased by AT&T.

"This is the next stage of a consolidation that began 10 years ago in the fragmented cellular industry," said Ira Brodsky, president of the Wilmette, Ill.-based consultancy Datacomm Research.

The Bell Atlantic/NYNEX cellular merger will not officially be completed before the PCS spectrum auctions take place at the Federal Communications Commission in November.

But the two companies are putting together a business plan to bid on spectrum properties in the hopes of building a national network integrating cellular and PCS.

Cellular and PCS operate at different radio frequencies, 800 MHz and 1.8 GHz, respectively, and have different technical requirements for cellular and PCS hand-held devices and base station equipment. But the carriers are convinced that equipment can be made to support both

"A lot still has to be worked out, but we believe 800 MHz and 1.8 GHz can be made to work together," said spokesman Kevin Inda. Inda said the merger confirmed MCI's view that carriers will need nationwide service in order to compete.

MCI intends to purchase a 17% stake in Nextel Communications, Inc., a Specialized Mobile Radio provider that also has designs on an impressive array of wireless services.

> dles to the merger are looming.

Bell Atlantic has supported Time Division Multiple Access (TDMA) in Boston, Pittsburgh and Washington, D.C., while NYNEX has backed Cellular Division Multiple Access (CDMA) in New York. CDMA and TDMA digital equipment is only interoperable in the

dual-use analog mode.

"It's an issue we'll have to resolve," acknowledged Strigl. "We will have to operate on one plat-

In addition to technical hurdles,

An AT&T spokesman noted that the Bell Atlantic/NYNEX cellular Technical hurmerger did not appear at first glance to face big legal obstacles.

legal scrutiny.

about six months.

AT&T is hoping the Bell Atlantic/NYNEX merger will calm concerns about competition raised by its McCaw merger.

Bell Atlantic will own 62.35% of the new venture, with NYNEX holding the remaining 37.65%. The plan has already been blessed by the two company's board of directors, with no direct shareholder approval required.

Mark Lowenstein, director of wireless research at The Yankee Group consultancy in Boston, noted that NYNEX and Bell Atlantic have maintained a cellular operation partnership in the New York metropolitan region for nearly a decade. "It's like they've been living together, and now they're getting married," Lowenstein said. 🗷

Cellular dwellers Potential subscriber population of top cellular carriers in the U.S. (in millions) Bell Atlantic and NYNEX GTE Personal Communications Services BellSouth Cellular Communications GRAPHIC BY SUSAN SLATER

Dennis Strigl, president and chief executive officer of Bell Atlantic Mobile Systems.

"It's a realistic goal. We're also looking at dual-mode handsets,' said MCI Communications Corp.

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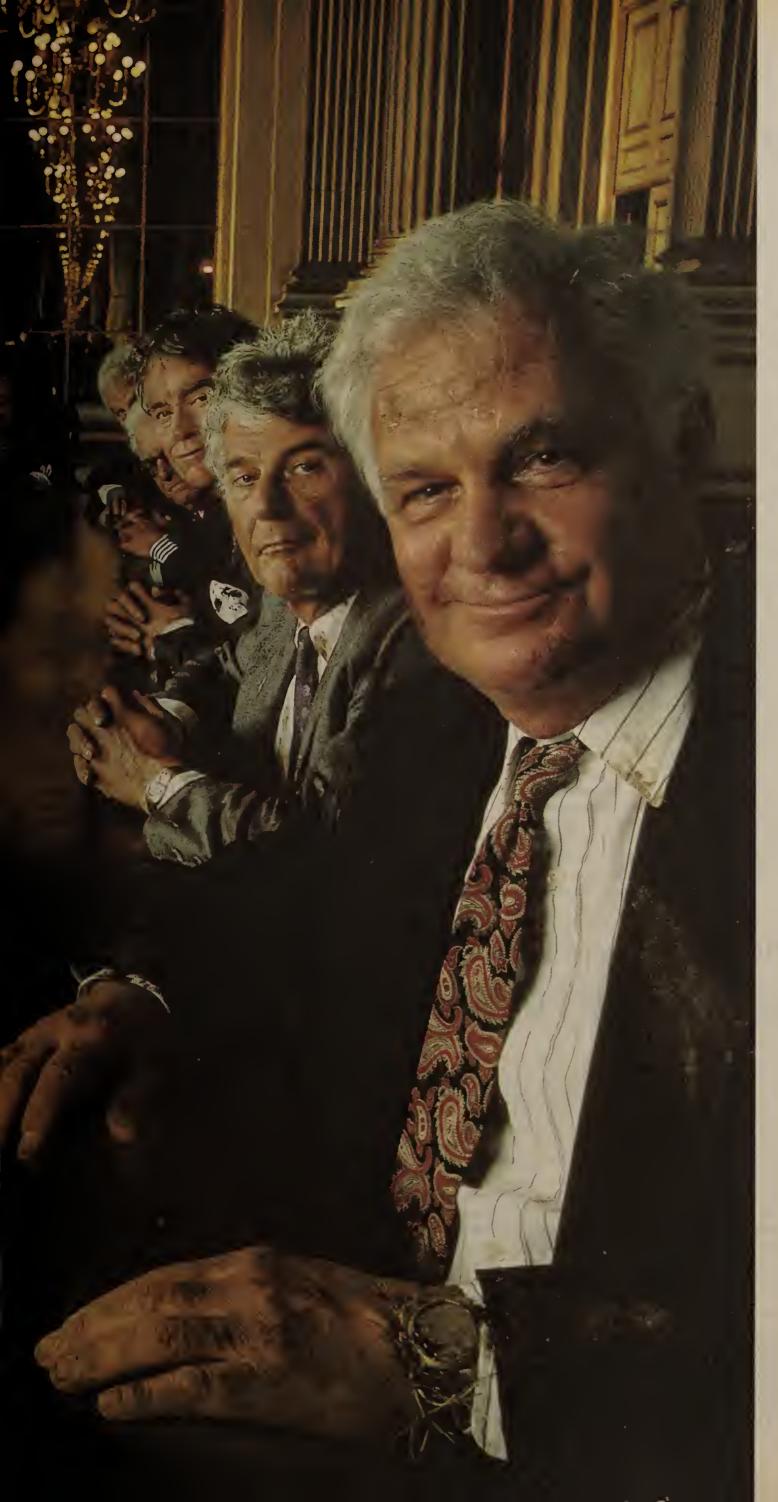
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OneVision diverts attention from SunSoft

Analysts are painting a gloomy picture for SunSoft, Inc.'s future in network and systems management in light of AT&T's endorsement of Hewlett-Packard Co.'s OpenView.

SunSoft recently licensed NetLabs, Inc.'s DiMONS 3G management software as the basis for its next-generation SunNet Manager

AT&T inherited NetLabs technology when it bought NCR Corp. since NCR's StarSentry network management product was based on Net Labs/Manager, the predecessor to DiMONS 3G.

It seemed natural to some that AT&T would license DiMONS 3G to evolve StarSentry or look to SunSoft's Encompass as the core of its One Vision framework. But that didn't happen.

'[SunSoft] has a very serious problem at this point. I don't know if users will gravitate toward a third solution" after HP's OpenView and IBM's NetView/6000, which is based on OpenView, said Charles Robbins, vice president of data communications research at Aberdeen Group, Inc. in Boston.

"This has to do with trying to figure out what the long-term industry standard is, "said Mary Johnston Turner, a principal at Northeast Consulting Resources, Inc. in Boston. "HP has a very large catalog of

So does SunSoft — but for its legacy SunNet Manager platform, which will be superseded by Encompass.

NetLabs never had the broad application portfolio that Open-View and SunNet Manager had, and that will come back to haunt SunSoft, observers said.

'[SunSoft] has excellent technology, but they may not have enough horsepower now to effectively compete long-term with OpenView 4.0," Robbins said. OpenView 4.0, expected to ship before the end of the year, brings OpenView into the realm of distributed, scalable network and systems management (NW, Nov. 8, 1993,

Before SunSoft can dispute Robbins' point, they have to deliver Encompass, said John McConnell, president of McConnell Consulting, Inc. in Boulder, Colo.

'They just can't [say] they're still a player,'' McConnell said. "That's gotten to be a little old."

Encompass is expected to ship before the end of the year. SunSoft did not respond to requests for comment on this story by press time. BY JIM DUFFY

AT&T adopts mgmt. blueprint based on HP, NetLabs technology

BY JIM DUFFY

Until now,

UNMA had been

the company's

blueprint for

integrated

management of

multivendor

voice and data

networks.

As expected, AT&T last week announced OneVision, an end-to-end management framework that incorporates technology from Hewlett-Packard Co. and Net Labs, Inc., and is designed to ease control of products and services from all of AT&T's business units.

OneVision is a replacement for the AT&T's 7-year-old Unified Network Management Architecture (UNMA), which proved too proprietary and inflexible for today's network management requirements (NW, June

20, page 1).

Until now, UNMA had been the company's blueprint for integrated management of multivendor voice and data networks. But UNMA was based on a hierarchical, manager of managers approach that was embodied in AT&T's Accumaster Integrator platform, a proprietary system that met with little success in the market place.

''[UNMA] was a good start, but we learned two lessons in the process," said Rick Roscitt, vice president of networking solutions ser-

vices for AT&T Business Communications Services. "First, a proprietary system wasn't flexible enough to meet the needs of customers and applications developers. And UNMA had to be replaced by a model based on distributed processing. Because of what we learned, it's time to move forward with OneVision."

One Vision includes HP's Open View management platform, NetLabs' NerveCenter event correlation technology and AT&T's BaseWorX application development and runtime software. One Vision will give AT&T customers a single, consistent view and control point for their public and private nets comprising AT&T products and services.

AT&T evaluated other platforms, such as IBM's Net-View/6000 and SunSoft, Inc.'s Project Encompass, for the One Vision system. Project Encompass is based on Net-Labs technology, as is AT&T Global Information Solutions' (GIS) StarSentry platform.

But AT&T chose OpenView based on market demand, application developer support and openness, said Nancy Goguen, vice president of network and systems management for AT&T GIS. OpenView is considered by many, including AT&T, to be the de facto standard platform for network and systems management.

That is because IBM appears to be taking Net-View/6000, which is based on HP's OpenView, into a proprietary realm. IBM said it will not license HP's OpenView 4.0 as the basis for future versions of NetView/6000 but will continue to support the OpenView application program interfaces that are already in NetView/6000 (NW,

May 2, page 18).

SunSoft's Project Encompass is based on NetLabs' DiMONS 3G platform, which, though technologically sophisticated, is not the darling of developers or users.

Indeed, more than IBM, SunSoft will be hurt by AT&T's decision to go with Open-View, analysts said (see story, this page).

"Trouble for Sun," said Charles Robbins, vice president of data communications research at Aberdeen Group, Inc. in Boston. "AT&T had made a decision to go with Net-Labs originally [with StarSentry], and that

would have been wonderful if NetLabs had been a bigger company and been able to expand their platform to get applications. But obviously, they weren't able to."

Yet to be determined is the underlying technology for One Vision's progression into an object-oriented management framework. Although AT&T officials said the framework will have distributed object data modelling — and Net Labs currently offers it with its DiMONS 3G platform they've not yet figured out where that will come from.

"There's a question of what the right object technology will be," Goguen said. "We don't have that answer today.

Users expect that answer to come soon.

Unless HP's ready now with homegrown distributed management technology for OpenView, it will likely mold something out of NetLabs code, said Frank Belland, senior communications consultant at Martin Marietta Corp. in Orlando, Fla.

"Net Labs stated that their intent was to host [DiMONS] 3G] on top of the OpenView framework," he said. \blacksquare

yberSpeak: Voices from the reader network

Is Microsoft's recently announced messaging product stable enough to base plans on?

"Good God, I hope so. The current [Microsoft Mail] transport is not what I would consider to be very efficient. But then again, we are talking about Microsoft. I only wonder how much they will charge for support on this incredibly new technology they are going to be marketing.'

Dave Roth, systems administrator, state of Michigan, Department of Natural Resources, Wildlife Division, East Lansing, Mich.

◆ "I think it is. Since we're already a Microsoft Mail environment, the migration will be very easy. We're already planning to migrate to it when it comes out. Migration will be a piece of cake. I'm really excited about it. I wish it would come out sooner. With all the great stuff [Microsoft] showed, I'd love to put it into effect right away. If it doesn't come out exactly when [Microsoft] said it would, I could live with that. I would rather have a really stable product and have to wait another month or two.

John Zabitchuck, computer specialist, **Defense Mapping Agency, technology and** information directorate, Fairfax, Va.

"We are talking about a product that is still six to 12 months from release. So whether it is stable enough is an unfair question at this point. I was there at the [recent Microsoft user] conference, and I was impressed with the product. I also spent a lot of time talking to some of the other 1,400 attendees. The talk 'from the small tables' is that Microsoft is on the right track. Microsoft finally understands what a large corporation needs.

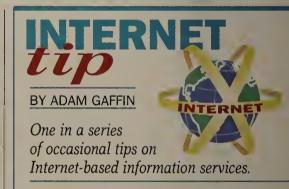
'The company has laid out a very open and versatile product. It's not an upgrade from [Microsoft] Mail 3.2; it is a new product written to be a corporate messaging system."

Martin Lindal, vice president of information and communication systems, Lindal Cedar Homes, Inc., Seattle

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HIGH-SPEED MODEMS

Users look to cut telecom costs with faster modems

BY JIM DUFFY

Beta users of V.34 and other 28.8K bit/sec modems report substantial savings in telecommunications costs and improved productivity with the new high-speed devices, which they say can substitute for more costly leased lines.

Systems integrator Computer Sciences Corp. (CSC) is trialing 28.8K bit/sec modems from Motorola, Inc. to fill a gap in carrier service offerings. Motorola claims the modems are V.34-compliant even though the standard is not yet final.

"In most of the world, you find that digital service is limited to 56K bit/sec [Dataphone Digital Service], or you go down to 9.6K

bit/sec," said Harry Reinhardt, director of systems engineering for



CSC. "A lot of time we get in a bind where we have to take the 56K circuits, which is a little overkill, but we need more than 9.6. We're looking for V.34 as maybe a cost-effective way to get that in-between bandwidth that we often need."

CSC is currently designing a network for one of its clients. Without releasing specific figures, Reinhardt speculated that the client might save millions over a 10-year period by implementing V.34 modems instead of leased 56K bit/sec circuits.

Reinhardt also said V.34 can provide more costeffective backup service for dedicated links than switched 56K bit/sec lines, or 9.6K or 14.4K bit/sec dial-up lines.

BellSouth Information Systems just finished testing MicroCom, Inc.'s portable TravelCard 28.8K bit/sec device. The recently announced TravelCard fits into the credit card-sized PCMCIA slot of notebook computers (NW, June 27, page 10).

The firm is evaluating 28.8K bit/sec devices to make its sales force more productive, said Brian Ford, manager of net engineering at BellSouth Information Systems. A couple of ways that can be accomplished is by limiting the amount of time spent transferring files and installing and configuring the modem.

"We were looking for a 28.8K solution to cut down the amount of time the [sales] guys were on the phone," Ford said. "What drove us to [TravelCard] was the raw speed and how easy the thing is to get

plugged in and get going."

"ATZ Magazines," an on-line periodical located in Albuquerque, N.M., is also using Motorola "V.34" modems to not only reduce the cost of using electronic bulletin board services, but to attract more business.

"Mail packets and message replies get [to their destination] twice as fast," said Joe Niderost, editor in chief of "ATZ Magazines." "And when you have a 28.8 [K bit/sec modem], it's also more attractive to users. The more users you get, the more subscribers you get."

Niderost said the Motorola devices interoperate with non-Motorola modems at 14.4K bit/sec because no other modems are V.34-compliant.

IBM unleashes ATM wares

Lineup includes Nways switches, concentrators, adapters, bandwidth and net mgmt. software.

BY MICHAEL COONEY

Chantilly, Va.

In the high-stakes world of ATM networking, IBM last week unleashed a product family that includes everything from ATM adapters to wide-area switches, a lineup the company hopes will hit the jackpot.

As expected, IBM rolled out its Nways BroadBand Switch family, which includes five wide-area networking switches, along with software

that controls them; local-area networking devices, including 25M bit/sec personal computer adapters and an Asynchronous Transfer Mode concentrator; and products for integrating today's LAN environments with ATM backbones (NW, June 27, page 1).

"We are rolling out a completely switched environment that integrates the existing network world with the ATM environment of the future," said Daniel Abensour, IBM's ATM and multimedia systems manager.

One of the key fixtures in this new environment is the IBM 2220 Nways BroadBand Switch family. The first two Nways switches, Models 300 and 500, will be available in December. And a low-end ATM feeder switch, the Model 200, will ship late in 1995. All three are positioned as end-user premises equipment.

The Models 200, 300 and 500 support three, six and 10 slots, respectively. An expansion model, Model 501, adds an addi-

tional six slots to the Model 500.

The Model 200 will support a single wide-area ATM link at up to T-3 speed to another Nways switch and up to eight Token-Ring or Ethernet LAN connections. It has an aggregate throughput of about 200M bit/sec.

The Models 300 and 500 have a switching capacity of 2.1G and 4.2G bit/sec, respectively. They can be configured to support a variety of WAN port speeds from 2M to

155M bit/sec Optical Carrier-3 speeds for data.

As many as two slots on both models can support voice interface modules, while

the others support any combination of WAN or LAN adapters, although IBM would not specify the various configuration limits.

All of IBM's Nways switches are fully redundant and support a variety of interfaces, such as ATM, X.25, High Level Data Link Control, Integrated Services Digital Network, High Speed Serial Interface and frame relay. They also support continuous bit rate interfaces for fax, voice and video.

IBM released few details on the high-end switches it will target for sale to the phone companies. Abensour did say the Models 700 and 800 will support 25.6G and 51.2G bit/sec throughput, respectively, and that the Model 700 will support 40 low- and high-speed adapters.

The Model 700 will ship late in 1995, and the Model 800 will ship sometime after that,

according to Abensour.

The IBM Nways BroadBand Switch Control Program is the operating system software that will control the new switch family. The software implements IBM's BroadBand Network Services (BBNS) technology, which enables the switches to allocate bandwidth on demand, control congestion, determine ATM net status and select optimum net routes. It also features circuit emulation and Pulse Coded Modulation for voice traffic.

"The technology behind the switches is leading-edge, but the real value in IBM's ATM products comes from BBNS," said Howard Anderson, managing director of The Yankee Group consultancy in Boston. "BBNS solves many problems in the ATM environment many other vendors haven't even begun to deal with yet, like flow and congestion control."



Daniel Abensour of IBM

BBNS implements IBM's own rate-based congestion control, which guarantees each connection between Nways switches a certain amount of bandwidth. If a session exceeds this set bandwidth, packets are selectively discarded, depending on priority and class-of-service characteristics.

See IBM, page 16

BRIEFS

Cisco Systems, Inc. and Wellfleet Communications, Inc. have upgraded their customer support operations with new programs. Cisco last week announced a channel certification program that is designed to enhance the sales and support expertise of its resellers so they can resolve end-user problems instead of Cisco personnel.

Wellfleet, meanwhile, has instituted a so-called Netexpert certification program in which end users and Wellfleet resellers, following required classroom training and on-the-job experience, are deemed capable of supporting Wellfleet products used in production networking environments.

Both programs are effective now. Cisco: (408) 526-4000; Wellfleet: (508) 670-8888.

McDATA Corp. has announced that it will build Enterprise System Connectivity (ESCON) products that will be resold by

IBM. ESCON is IBM's fiber-based mainframe channel technology. The companies did not indicate what products McDATA would build, but the Broomfield, Colobased firm already makes ESCON channel extenders and ESCON protocol analyzers it could resell to IBM, analysts said.

McDATA: (303) 460-4442.

ConferTech International, Inc. last week announced that it has started a service under which users can dial in to a bridge to set up multiparty document conferences. Initially, the ConferTech service will support the WorldLinx Telecommunications, Inc. VIS-A-VIS data-sharing software, and agreements with FutureLabs, Inc., Xerox Corp. and AT&T are expected to broaden the software products support by the ConferTech bridge.

ConferTech: (800)633-8303.

Datapoint Corp. last week unveiled its MINX SuperHub 3200, a 32-port video hub for connecting desktop videoconferencing systems on a local-area network.

The SuperHub 3200, which costs \$29,999, supports up to 786 desktop video users.

Datapoint: (210) 593-7866.

Mustang Software, Inc. last week brought out a new version of its bulletin board software that makes it easier to use and customize bulletin board system (BBS) applications.

Mustang is also bundling its Wildcat BBS software products together and offer-

ing them as a packaged suite.

Version 4 of Wildcat includes a new programming language that allows users to write BBS applications without having extensive programming experience or detailed knowledge of modems. It also includes an improved database search-andretrieval feature that locates and accesses data 10 times faster than the previous version of Wildcat.

Wildcat 4 starts at \$129. The Wildcat BBS suite, which includes Wildcat 4 and programming, utilities and Internet gateway software, costs \$999.

Mustang: (805) 873-2500.



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HP and NetLabs hit the altar with NerveCenter technology

BY JIM DUFFY

Hewlett-Packard Co. and NetLabs, Inc. last week announced a technology sharing arrangement that will bring new event correlation capabilities to HP's OpenView and pave the way for NetLabs to wind down its own management platform development.

As expected, HP said it will license NetLabs' NerveCenter event management technology and eventually integrate it with OpenView's Simple Network Management Protocol-based Network Node Manager (NNM) application (NW, June 20, page 1). NetLabs will also offer transition tools to help users of its DiMONS management platform migrate to Open-



Roselie Buonauro, vice president of marketing for NetLabs, confirmed that the company plans to discontinue development of general-purpose management platforms in favor of applications and tool kits (NW, June 20, page 70)

NNM automatically discovers, maps and monitors Internet Protocol devices. NerveCenter, a component of DiMONS, is a rules-based alarm system that correlates and filters alerts, and presents them to network operators with additional relevant information.

The work between the two companies will progress in phases.

The first phase, to be completed in September, will result in the current version of NerveCenter being interoperable with Version 3.3 of OpenView. This will allow OpenView users to also run DiMONS on their workstations, enabling them to poll and monitor the operational status of OpenView-managed devices using NerveCenter.

This phase will also begin the transitional period for DiMONS users to OpenView, although NetLabs will continue to sell and enhance DiMONS.

The second phase, to be completed in 1995, will find NerveCenter packaged with OpenView and running independently of DiMONS. At this point, it is likely that the general-purpose DiMONS platform will no longer be developed by NetLabs.

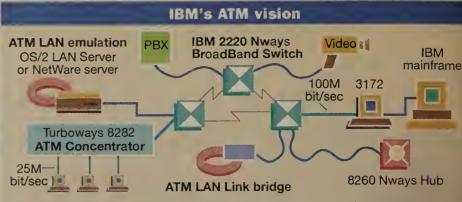
OpenView will be positioned as the preferred migration alternative for DiMONS users, although NetLabs' OEM vendors, including SunSoft, Inc., may choose to maintain the platform for those users staying with the DiMONS product.

'We're going to continue to enhance DiMONS short term, but strategically over time, we would think that DiMONS will be replaced by the combination of HP OpenView with NerveCenter or another platform," Buonauro said.

HP will also likely add NerveCenter to its OperationsCenter systems management application and OpenView/DM platform for the telecommunications environment, said Gordon MacKinney, HP Open-View program manager.

Analysts believe that HP will take on more Net-Labs technology in the future, possibly the DiMONS 3G Development Environment, as well as AssetManager and other applications.

"The way their announcement's phrased, Net-Labs is going to have a role to play in the applications space [at HP]," said John McConnell, president of McConnell Consulting, Inc. in Boulder, Colo. In particular, he said HP may use NetLabs' technology in OpenView's upcoming distributed object data modeling capability. **Z**



IBM's ATM product line includes everything required to integrate existing equipment and applications with new ATM backbones, from LAN emulation products to ATM adapters and high-end switches.

IBM

Continued from page 13

Abensour said IBM will use ATM Forum standards for flow control between non-IBM switches and the Nways switches once they are defined.

To manage its new ATM environment, IBM announced a Common Management Information Protocol (CMIP)-based application for its Net-View/6000 platform.

The Nways BroadBand Switch Manager for AIX applications will notify NetView/6000 operators of ATM node, adapter or trunk problems. It will also gather and keep track of net topology and status changes for up to 256 nodes in an Nways net. All Nways products contain CMIP agents that report data to the new application.

The Nways BroadBand Switch Manager will be available Dec. 30 for \$10,000.

For the campus environment, IBM announced a set of adapters with embedded LAN emulation support and an ATM LAN bridge, dubbed ATM LAN Link, that will let existing LAN applications take advantage of the ATM environment.

LAN emulation, which maps data from LAN applications to ATM flows,

will first be featured in the Turboways 100M bit/sec adapter for Novell, Inc. NetWare servers. The adapter will be available in September for \$1,795. An adapter for OS/2 LAN Servers will be available in December.

LAN Link is a stand-alone ATM bridge that links up to four Ethernet or Token-Ring LANs over a single 100M bit/sec line to IBM's 8260 ATM hub. It will support LAN emulation technology and switch data between ATM-connected workgroups.

Also introduced for the campus ATM environment:

- Turboways 25M bit/sec Adapter with DOS and Windows support, available now for \$395 each in groups of five. An OS/2 adapter will be available in December for the same price.
- Turboways 8282 ATM Concentrator, which supports PCs outfitted with the Turboways Adapters. Available in an eight- or 12-port configuration, the 8282 will support a maximum of 256 virtual circuits. It is available now for \$3,995 to \$5,994, depending on configuration.
- An ATM Adapter for the 3172 Interconnect Controller that will tie ATM LANs to mainframe resources.

IBM did not disclose pricing and availability.

©IBM: (919) 254-9026.

VIRTUAL MEETINGS

Virginia saves costs through conferencing

BY ELLEN MESSMER

Dollar

GRAPHIC BY SUSAN J. CHAMPENY

The state of Virginia is bullish on audioconferencing and videoconferencing services, what it means to the bottom line.

Virginia's department of informa- The Almighty tion technology (IT) has devised a cost-avoidance formula that shows management how much money is saved by conducting meetings via audioconference and videoconference. It also helps the department calculate a fair price for its services and charge back agencies accord-

'We talk about cost-avoidance as money that wasn't spent," commented Robert Keeton, teleconferencing coordinator at the IT department. He added that conferencing has led to a decrease in travel and the formula details how much that has saved, even given the cost of the video and audio alternative.

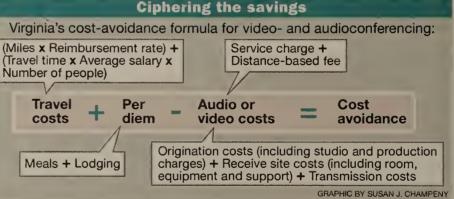
Keeton, who spoke on the subject at the recent International Teleconferencing Association meeting in Dallas, called costavoidance a critical factor in gaining support for upgrades to the state's audioconferencing and

thanks to an accounting scheme that shows—service, we had to justify the charge to agencies on a cost basis," he explained.

Cost-justification frequently looms as a challenge to technology management departments whenever significant capital expenditures

'We're always looking for new [cost-justification] methods," said Jim Boike, BellSouth Corp.'s IT manager for the audio and video services provided internally to the carrier's employees.

The travel-cost variable in the Virginia costavoidance formula (see graphic) uses the aver-



videoconferencing equipment. "To upgrade age Virginia state employee salary rate - ing to Keeton. \$14.83 per hour — multiplied by the number of people at each remote site in an audioconference or videoconference. A mileage reimbursement rate of 24 cents per mile, figuring three people in a car, is factored in, along with lodging and meal charges.

'A night in a motel is calculated at \$50, and a meal at \$7, which is real conservative," Keeton added.

Virginia bases its audio service charge on the number of phone lines, multiplied by the conference minutes and figuring in 2 cents per minute for audioconference bridging service.

A separate charge for the long-distance service is calculated at a set 14 cents per minute,

and multiplied by the number of lines in the conference.

In Virginia, where state employees rack up 500 hours of audioconferencing each month and 10,000 hours of satellite time each year for educationrelated videoconferencing, the cost-avoidance formula has been "believable and defensible," accord-

The biggest headache related to cost accounting has been the technical problem of integrating the audioconference data captured in the state's three ConferTech International, Inc. audio bridges into a separate computer set up to handle billing and reporting.

If the billing functions were done directly in the bridge, there wouldn't be the need to set up a separate relational database for billing, Keeton noted.

Jayne Grott, director of product development at ConferTech International responded that vendors have avoided including billing systems in their audio bridges since every user wants to calculate their bills differently. 2

THE INTERNET

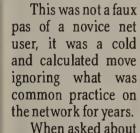
by Ed Krol

More on lawyers and the Internet

bout two months ago, something happened that was so bizarre, yet predictable, that any writer on current Internet events was obligated to do a column about it. This is my entry into the fray.

The event started when two lawyers, whose names I won't mention because they've already gotten too much publicity, posted an advertisement to every news group and mail-

ing list they could find on the Internet.



When asked about their indiscretion, rather than be conciliatory, their response was that they bought a commercial connec-

tion and were being commercial.

Although they claim to be forward-looking visionaries into the commercial Internet of tomorrow, they are really the stereotypical Americans I thought were laid to rest a genera-

Gone, I thought, were the days of the swaggering American, who speaks English loud and slow, as if it were obviously the superior language and his the superior culture.

Today, I thought, is a time of sensitivity to local culture and customs, training in local language and internationalism — U.S. firms doing business with the world, not conquering it. If this Internet incident is an indication of the state of business in the U.S., I was wrong.

What the lawyers failed to realize is that the Internet is not America. The Internet culture is not American culture personified electronically or some random antibusiness culture imposed on network travelers by socialist hippies of the '60s.

The Internet has always been international — its original proof of concept demos included sites in the U.K. and Europe.

Its culture is international, too. The net evolved over 25 years to where it is today because it had to deal with problems for which there were no good technical solutions.

The major problem was with information overload. If everyone sent messages about everything to everyone, no one could do business on the net and it would become useless.

To anyone with any business savvy, this makes sense. Louis Gerstner wouldn't be able to function if every memo produced by any IBM employee ended up in his 'In' basket. He makes his information requirements known, and his employees bring him the information he needs.

This is the same filtering mechanism that exists for the Internet news groups and mailing lists. People declare their information requirements by subscribing, and they rely on the community to bring those things of importance to the attention of the subscribers.

These two examples share the same goals and requirements, but a different compliance

In the first, compliance is mandated by

employment — if you don't do what's required, you're out on your ear. In the second, compliance is voluntary because no one wants to be put in the position of censor, although censorship could easily happen.

I could see every news group in existence electing a moderator (or a moderating committee) to screen every post for applicability before it was distributed. It would certainly slow down the dialog, in many cases to the point of uselessness.

But when you have disorder, people tend to overreact.

All of this reminds me of a song written

about ten years ago by the ultimate satirical folk performer, Tom Paxton. Its chorus began, "In ten years, we're gonna have one million lawyers – how much can the poor nation stand?" The song points to the cultural problems of having lawyers behind every tree.

Little did he know how prophetic his words were to a media he probably never imagined.

→ Krol is author of The Whole Internet (O'Reilly & Associates, Sebastopol, Calif., 2nd edition, 1994) and assistant director for network information services at the University of Illinois at Urbana-Champaign. He can be reached at e-krol@uiuc.edu.



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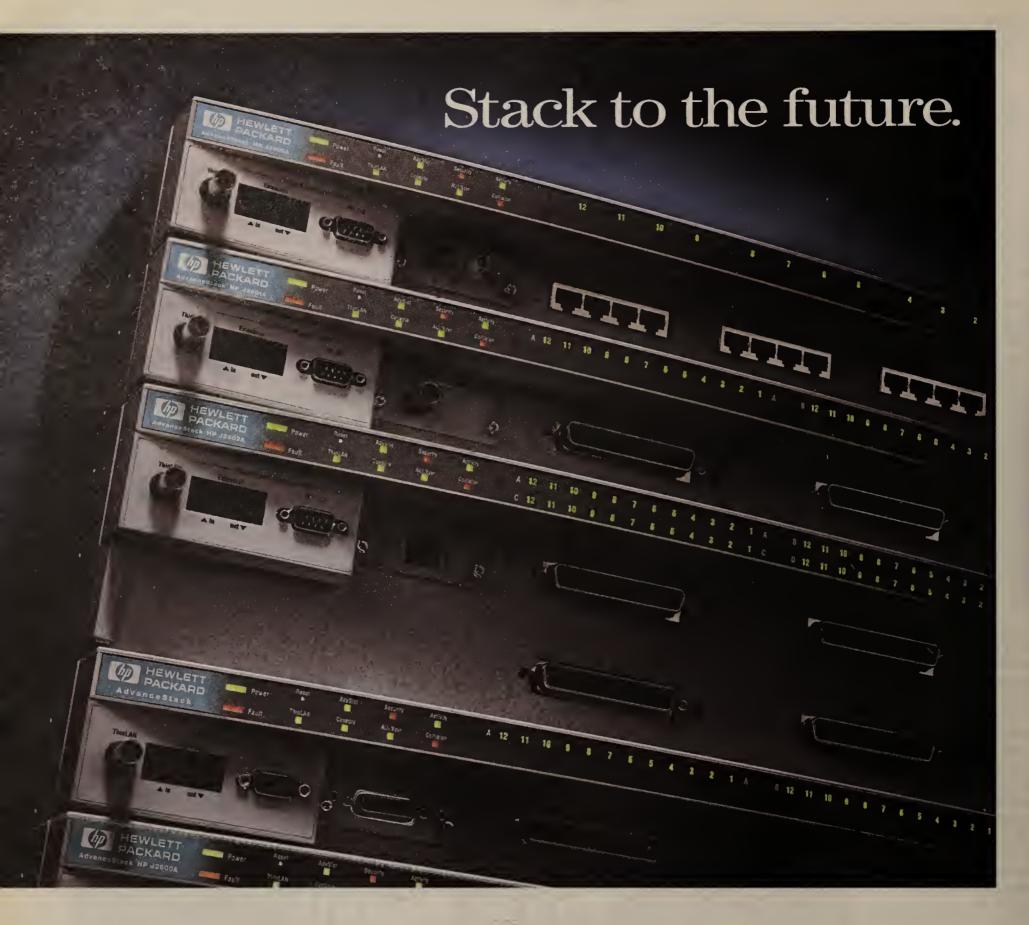
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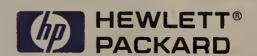
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BRIEFS

Proving a skittish market wrong, Cabletron Systems, Inc. last week announced record financial results for its first quarter of fiscal year 1995 ended May 31. Despite some stock hits the company has taken as a result of less than robust results from its chief competitors, Cabletron showed revenue of \$180.7 million for the quarter, up 37% from the \$131.5 million reported in the first quarter of 1994. Earnings were \$36.2 million, an increase over the \$26.2 million recorded for the first quarter last year.

Cabletron also announced that its board of directors has authorized the company to repurchase as much as \$100 million of its common stock.

According to the company, the current stock prices are undervalued, so the purchase of additional stock represents a good investment.

Cabletron: (603) 332-9400.

Standard Microsystems Corp. (SMC) also bucked the stock market trend last week when it announced record first-quarter results. In the quarter ended May 31, SMC recorded revenue of \$80 million, up 17% compared with the \$68.4 million from last year's first quarter. Earnings rose 22% to \$5.4 million from \$4.4 million in the same quarter last year.

SMC: (516) 231-0056.

Central Point Software, Inc. last week rolled out a new version of its antivirus software for Novell, Inc. NetWare networks. Central Point Anti-Virus for NetWare 2.5 offers a new Central Command and Workstation Sentry feature that allows net managers to install, configure, run and update virus protection on both workstations and servers from a central location. The new version also includes enhanced scanning engines that increase the number of viruses detected and decreases the time required to uncover new viruses.

Available now, it is priced at \$1,199 per server, which includes a license for one server and an unlimited number of client workstations. An upgrade to the new version costs \$399.

Central Point: (503) 690-8088.

UB Networks, Inc. has rolled out Release 17.1 of its personal computer-based **management platform,** NetDirector for OS/2. The new version includes support for OS/2 2.1 as well as two new applications, FocusView and Secure Domains.

FocusView is a graphical hub management application that allows users to monitor, control and configure UB's entire hub line, giving them full control to reset, enable and disable hub modules

Secure Domains allows net managers to create administrative domains in a network and assign Simple Network Management Protocolbased devices to those domains.

Available now, NetDirector for OS/2 17.1 costs between \$4,500 and \$20,495, depending on configuration. FocusView is included, but Secure Domains costs an additional \$995 to \$4,250.

UB: (408) 496-0111.

Proteon reshuffles the deck

Company announces layoffs: Bergman is out and Capone is in as CEO.

BY SKIP MACASKILL

Westborough, Mass.

~ view

Proteon, Inc. last week attempted to stem the tide of red ink flowing from its books with a revamped business strategy that includes the hiring of a new CEO, a 25% work force reduction and a

renewed focus on its LAN products group.

The moves represent the company's second major restructuring ef-

fort during the past six months, and industry observers questioned whether the changes will be enough to get Proteon back on the road to profitability.

Proteon has suffered losses in five consecutive quarters, last showing a profit in the fourth quarter of 1992. For the most recent quarter ended April 2, the company recorded a \$776,000 loss.

"I don't think they've gone far enough in trying to save the company," said Paul Callahan, senior analyst at Forrester Research, Inc., a consultancy in Cambridge, Mass. "Proteon realizes it needs to get more focused in select areas, but it's not moving in that direction effectively enough."

The immediate fallout of last week's announcement will be layoff slips for approximately 100 Proteon employees spread across several departments, leaving the company with a head count of about 275. Three years ago, the company had more than 500 employees.

To cover the layoffs, Proteon will incur a restructuring charge in the second quarter ending July 2 of between \$11 million and \$15

million. This action comes on the heels of a \$5.4 million restructuring charge taken in the fourth quarter of 1993.

The company announced that the current vice president and general manager of its LAN Products Division, Daniel Capone,

will become the new president and chief executive officer. He replaces Bruce Bergman, who only ascended to those posts last December.

Bergman will remain on Proteon's board of directors and participate in implementing the company's new strategy.

That strategy includes a renewed focus on the company's LAN Products Division, which is responsible for Proteon's tokenring adapter cards and intelligent hubs. Based on that chosen direction, Bergman said it made the most sense to pass the reins to Capone, who understands that business segment better than anyone at Proteon.

"When I started six moths ago, my mission was to assess our strategic partnerships and rebuild the management team," Bergman said. "By the time that process was over, it was clear we needed a major

restructure that centered on extending our efforts in the LAN Products Division. It was my choice to step aside and let the best person here lead that charge."

Proteon will expand its adapter family beyond token ring for the first time, with plans to offer a full line of Ethernet network interface cards. The company will also enter the switched Ethernet market with a line of new hub products.

Both the Ethernet adapters and switches will come from other vendors but also involve some Proteon technology. The company declined to say who it will work with on these products or when they will be available.

The company will remain true to its token-ring roots, however, with plans to announce a new line of Peripheral Component Interconnect- and PCMCIA-based token-ring adapters this summer.

Daniel Capone, Proteon's new president and CEO



1987 — Joined Proteon as vice president of manufacturing operations; most recently was vice president and general manager of LAN Products Division.

1983-1987 — Served as vice president of sales and marketing, and was vice president of operations at Charles River Data Systems.

1976-1983 — Worked in product quality and reliability division of Motorola Codex.

"We need to get back to our roots and regain our momentum," Capone said. "Our LAN Products Division has been very vibrant, but we haven't applied the resources needed there. We are going to quadruple our merchandising, market and See Reshuffle, page 20

CONTRACTS

GTE to power up VINES network

BY CARYN GILLOOLY

Westborough, Mass.

GTE Corp. last week became Banyan Systems, Inc.'s largest customer as the two companies announced the signing of a fiveyear, multimillion-dollar contract.

The contract calls for GTE to install a 30,000-node VINES network as well as Banvan's Enterprise Net-Services working (ENS) for HP-UX and ENS for SCO Unix products, Banyan's Intelligent Messaging engine, and its Beyond-Mail front-end mail application.

Although neither company would dis-

close the dollar amount of the contract, Bill Johnson, vice president of product marketing for Banyan, based here, stressed the magnitude of the agreement. "This is the largest new design win we've received in one

Buying into Banyan

order," he said. "It's our largest account in terms of the number of seats."

GTE currently has a 1 400-

GTE currently has a 1,400server, 30,000-node net running mostly 3Com Corp.'s 3+Share network operating system, said

John Miller, director of office systems and telecommunications at GTE. The system was implemented more than 10 years ago, he added.

But with increasing network needs, the company decided to move away from the discontinued 3Com product.

"We looked at [Microsoft Corp.'s] LAN Manager [and

NT], we looked at NetWare, and we looked at VINES," he said. "We liked the StreetTalk global directory and [the fact] that we could support other network operating systems under ENS.

"But it was all really a matter of timing," he continued. "We needed to move ahead quickly with enterprise networking, and the only mature product on the market today is VINES."

According to GTE's Miller, the urgency of the network upgrade is the result of a desire to implement more powerful client/server applications.

"Today, we run word processing, spreadsheet and electronic mail applications," he said. "In the new environment, we plan to run client/server applications."

Although he would not be specific, Miller said the new applications would make use of workgroup, work flow and dis-

See GTE, page 20

GTE will use...

VINES for a 30,000-seat network to provide general office automation as well as support local and enterprise client/server applications.

Intelligent Messaging for enterprise electronic messaging.

BeyondMail for a front-end interface to the Intelligent Messaging back-end system.

ENS for HP-UX on HP 9000 machines.

ENS for SCO Unix to tie in systems running that operating system.

Xyplex revamps mgmt. package with new apps

Xyplex, Inc. this week will roll out a new version of its network management software that will allow users to manage both chassis-based hubs and nonhub-based network devices from Xyplex via the same console.

ControlPoint 2.1, which can run as a stand-alone management package or in conjunction with other vendors' management software, will enable centralized management of Xyplex Network 9000 Routing Hubs as well as nonmodular routers, communications servers and hubs from the firm.

Previously, each device required separate management tools.

The software will also feature a number of new graphical user interface-based applications:

- Remote View will automatically poll 9000 hub-based modules as well as nonmodular Xyplex net devices, giving users a graphical display of each
- Map Poller will poll all devices and display their status via a color-coded system.
- Fault Management will allow net managers to assign thresholds, monitor events and kick off actions based on predefined what-if scenarios.

■ Slot Connections will let users dy-

namically reconfigure the 9000 by clicking on an icon for a port or module and reassigning it to any net segment supported by the hub. This ap-

The 2,852

Network 9000

accounted for

one-third of

Xyplex's \$80

The company

an additional

4,188 Network

9000 hubs this

expects to ship

hubs sold in 1993

million in revenue.

plication will end the need to rewire the hub in the wiring closet.

■ Table Management will allow users to automatically sort and map specified net parameters into spreadsheet form. The new feature will let network managers more quickly focus on particular statistics and data by eliminating the need to scroll through the entire parameter list to find information.

According to Steve Mank, vice president of marketing at Xyplex, ControlPoint has been rewritten using objectoriented code, which

will allow the same version of the software to work with both DOS and Unix network management platforms from

"Previously, we maintained separate versions of ControlPoint for DOS and Unix, meaning new applications or upgrades had to be written sepa-

rately for each version," he said. "The new code will allow us to write [applications just once, which allows users to get the same look and feel no matter what version they use."

ControlPoint will work with Hewlett-Packard Co. OpenView for Unix, complementing existing support for SunConnect's Unix-based SunNet Manager as well as HP's DOS-based

OpenView for Windows.

Analysts say Control-Point 2.1 lets Xyplex catch up with rival hub makers that are offering similar features in their net management pack-

"While there is nothing earth-shattering here, Xyplex is providing the needed platform support and features that users need in a package that is cost-effective," Melissa Morales, assistant analyst at DataPro Services Information Group, a consultancy in Delran, N.J. "It needs to bulk up its platform support with IBM's Net-

View/6000, which the company has acknowledged is a future direction."

ControlPoint 2.1 for DOS systems is available for \$2,195. The software will be available on Unix systems in August for \$2,995. Upgrades to Version 2.1 are free.

©Xyplex: (508) 264-9900.

NET RESULTS

by Mark Gibbs

Wireless connections and problems

ere I am at 35,000 feet on my way out West using what passes for a personal computer a Hewlett-Packard HP95LX — to type this.

Normally I would avoid such a device since it has limited storage and because it stretches my hunt-and-peck typing style to the

However, the HP95 came with a key networking technology of the future — a wireless electronic mail connection.

I've been using the HP95 with a RadioMail connection, and I'm

pretty impressed. The Radiomail system is, as we say in technical circles, very cool.

The network connection is provided by a Mobidem transceiver, a cellular communications about the size of a small telephone handset with retractable six-inch antenna and a cable that connects to the computer.

The transceiver communicates with the RadioMail wireless connectivity system, which provides access to an Internet host, radiomail.net, and then to the whole network community.

Ah! I've arrived at the airport and am now in the terminal. Let's check for mail.

Hmmm, a message from the folks at Infinite Technologies. Uh oh, a little problem with my subscription to one of the company's E-mail-based discussion lists handled through its Librarian product.

When I left the office for this trip, I used a feature of Banyan Systems, Inc.'s BeyondMail called the Message Minder to reply to incoming messages with a note that I was out and would get back in touch later.

Of course (duhhh), as I belong to discussion lists that send my own postings back to me, I wound up getting caught in a nasty cycle in which I kept informing myself that I was out and would get back

This points out that the industry has yet to acquire enough experience with these new types of communications. Why on earth should I get my own messages back from the list server? And why doesn't my E-mail system offer an option to reply only once to each sender when in "while I'm out" mode?

Don't misunderstand. I'm not singling out the BeyondMail or Librarian products as they aren't alone. It is simply very early on in the field of electronically mediated communications.

But back to RadioMail. My only complaint is that message length is limited to a maximum of 9K bytes and defaults to 1K byte.

This limitation means that if you want to handle E-mail messages of arbitrary length, you need to have some other system

perform message fragmentation you, and there needs to be software on the mobile system to do reassembly.

Having used this system for a few days, I can see that I'm going to become addicted. I suspect that most people who rely both on using Eand being mobile will also be

easily hooked.

What does all this point to?

One: Within the next decade, the only reason to be wired into a net will be if you absolutely must multigigabit-per-second data streams to other computers. As you'll probably be some kind of pipe stress freak or crystallography addict, you'll have a good

Two: The idea of being tied to a desk will be laughable. For that matter, the idea of a large corporate headquarters building will be reserved for those organizations that will be quietly ossifying their way to extinction.

Three: There is some way to fine-tune the software that we use to send and handle E-mail

Four: If you're not connected, ready and capable of more-orless instant response, you will become a nonplayer in many markets. The key to this future is wireless communications, both on the LAN and the WAN.

So get ready. You will be using wireless technology very soon, and, like me, you will be able to find out your mistakes almost as they happen.

→ Gibbs is a consultant and writer in Ventura, Calif. He can be reached at (800) 622-1108, Ext. 504, or on the Internet at mgibbs@rain.org.

Reshuffle

Continued from page 19

development resources in that area and broaden our prod-

Proteon will also change the way it approaches its Inter-

networking Division, which is primarily responsible for the company's line of routers. The firm will attempt to port its routing software to other companies' hardware platforms through OEM deals and technology partner-

It will also continue to enhance and support its existing hardware platforms, especially in the remote office area,

The company also announced that it has ended its "active phase of engagement" with its investment banking firm, meaning any and all negotiations Proteon was having with potential buyers have been put on hold indefinitely. That will apparently jeopardize a pending deal with Cross-Comm Corp. under which Proteon would have sold its router and hub businesses to its crosstown rival (NW, March 14, page 1).

Capone declined to comment on any negotiations that may or may not have been taking place with other compa-

Despite these efforts, analysts wanted to see more. "There is nothing radically different here," said Todd

Dagres, vice president of equity research at The Robinson-Humphrey Company, Inc., an investment research firm in Atlanta.

"We haven't seen how — or if — it's going to build a best-of-breed product for a new or

existing market," he said.

"It wants to expand in an Ethernet adapter market that is essentially a commodity market dominated by 3Com [Corp.] and [Standard Microsystems Corp.]," he added. ''That's not going to allow it to regain its financial footing.''

The router market, meanwhile, is controlled by Cisco Systems, Inc. and Wellfleet Communications, Inc., he said. And IBM and Madge Networks, Inc. have a tight grip on the token-ring market into which Proteon seeks to expand.

©Proteon: (508) 898-2800.

Continued from page 19

tributed database capabilities.

"We're taking out an office automation network and putting in a mission-critical production environment," he said.

GTE currently has a variety of disparate E-mail systems running across the company that cannot be centrally managed. Under the Banyan contract, GTE will change out its existing mail systems and implement the BeyondMail front-end application Banyan stressing the importance of Banyan's acquired through the purchase of Beyond, Inc.

The BeyondMail clients will be hooked together using Banyan's Intelligent Messaging E-mail engine, which is integrated into both VINES and StreetTalk.

One more reason for moving to VINES, Miller said, is that it has the ability to support GTE's growth esti-

"Over time, we expect the network to grow by approximately 10,000 to 15,000 Unix users," Miller said, ENS products.

Banyan sells ENS for several Unix versions — such as IBM's AIX, The Santa Cruz Operation, Inc.'s SCO Unix and Hewlett-Packard Co.'s HP-UX — that let users run these systems within the VINES environment.

"ENS will let us coexist with other network operating systems," he said. "If we acquire other companies or other sites need to run another network operating system, we can include these other sites within our

GLOBAL SERVICES

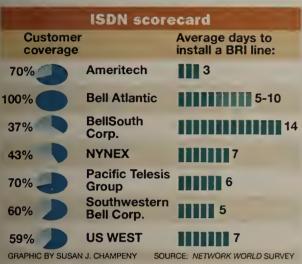
Voice, Data and Wireless Services, Regulatory Issues and Voice CPE

Bells doing better with ISDN

BY BILL BURCH

Washington, D.C.

While ISDN is finally attracting attention after years of getting no respect, users report that carriers still have a way to go in effectively deploying and supporting the service.



In addition to long-standing complaints about spotty coverage and inexperienced sales staffs, users now point to problems with nontariffed Dchannel packet services and limited carrier support for full 64K bit/sec connections. Carriers must develop broader service offerings and beef up staff training, users said, if the full promise of Integrated Services Digital Network is to be realized.

Case in point is Charles Schwab & Company, Inc. in San Francisco, which wants to use ISDN to support a

virtual call center application. Victoria Milonas, Schwab's technical planner, has worked with Bell Atlantic Corp., NYNEX Corp., Pacific Bell and US WEST, Inc., with varying results. She has experienced poorly trained personnel and carriers that were unprepared to provision services in their tariffs.

"ISDN can still throw people," she said.

Schwab's plan is to create regional call cen-

ters supporting the firm's 200 U.S. branch offices. When a call comes in to a branch office, the ISDN Basic Rate Interface (BRI) handset would query a server at the regional call center for routing instructions. Milonas wants to send the query over an X.25 connection on an ISDN D-channel link.

When Schwab approached US WEST for D-channel packet service for two of the brokerage firm's call centers, the regional Bell holding company did not have the service tariffed, Milonas explained.

"They were a little stunned," she said, adding that US WEST told her that it would have to write up a special contract and the service could wind up costing \$100 per line. "You could tell they didn't want to do it."

US WEST has D-channel packet service only in Colorado, Nebraska and Washington under business tariffs that require customers to order services in a block, said Toni Kokao, US WEST's ISDN BRI product manager.

The carrier is slowly widening its ISDN coverage and increasing the service's flexibility. It is beginning to offer single-line ISDN service, with tariffs in effect in Colorado and Washington. It plans to file tariffs for the service in Arizona and Oregon by the end of the third quarter, Kokao said.

Milonas has had a better experience with Pacific Bell, which she said has been knocking itself out to get the

See ISDN, page 22

PacBell to drop fees for local ISDN off-peak calls

To get more firms to buy ISDN lines for employees' home use, Pacific Bell plans to eliminate usage fees for data and voice calls of 20 miles or less from 5 p.m. to 8 a.m.

Pacific Bell expects the California PUC to approve its tariff filing for the service this month, said Kathle Blankenship, director of switched digital services at Pacific Bell. If approved, the tariff will take effect in August.

Immediate beneficiaries are expected to be telecommuters looking to access their companies' local nets and Internet users seeking to make large file transfers.

Restricting the new pricing plan to off-peak hours does not bother Stan Kluz, a telecommunications engineer at Lawrence Livermore Laboratories and chalrman of the California ISDN Users Group. "From our experience with 120 to 130 people at home, we already see that the peak usage is 6 to 8 in the morning and 6 to 10 in the evening," he said. Many of those spend some time in the office and try to arrange their schedules to avoid rush hours.

Internet users are accustomed to working at these hours, said Robert Rosenberg, president of Insight Research Corp., a market research firm in LlvIngston, N.J. "If you access your local node at off-peak hours, typically your throughput is going to be faster," he said.

Paul Baer, coordinator of research and education for Internet access provider BARRNet, said Pacific Bell's move is a "step in the right direction," but ISDN equipment for the home still needs to come down in price for an ISDN service to be broadly attractive.

BY DAVID ROHDE

BRIEFS

Here's one interexchange carrier executive who will not be making any more arguments against the entry of regional Bell holding companies into long distance. Pacific Bell last week said it has signed on David Dorman to serve as its new president and chief executive officer. Dorman was formerly president of Sprint Corp.'s Business Services Group. Pacific Bell has won approval from the California state assembly to enter the long-distance business in-state and hopes to win federal approval for the plan (NW, June 6, page 34). Sprint named Business Services Sales Chief Kevin Brauer to replace Dorman.

BellSouth Corp. last week joined the ranks of regional Bell holding companies looking to offer consumer video services. The carrier said its proposed trial to 12,000 homes near Atlanta envisions 60 analog cable TV channels and 300 channels for electronic mail, home shopping, banking and video games. Participating vendors include Hewlett-Packard Co., Scientific-Atlanta, Inc. and Oracle Corp.

Now look who's doing a trade show. The Clinton administration's Information Infrastructure Task Force, joined by the Council on Competitiveness, will hold what it bills as a "major conference" on Sept. 7-8 in Washington, D.C. The conference will feature panels addressing applications in health care, electronic commerce, manufacturing, education and entertainment, plus more than 20 demonstrations of advanced video and other communications links. For a faxed agenda and registration form, call (908) 885-6758.

Olivetti S.p.A. and Hughes Network Systems Corp. are forming a new company called Hughes Olivetti Telecom that will build and manage a pan-European satellite network. Ownership of Hughes Olivetti Telecom will be split fifty-fifty by the two companies, each of which have contributed \$2 million in start-up funding. The new company's base of operations will be in London, where Hughes already offers very small aperture terminal services in the U.K. with a partner, Maxat.

SkyTel turns attention to local mart

BY JOANIE WEXLER

San Jose, Calif.

At a time when ubiquitous coverage is high on most wireless users' priority lists, nationwide paging company SkyTel Corp. is preparing to go local.

SkyTel will announce later this month that it will offer on a metro-area basis the same information services it has been rolling out for its nationwide one-way paging net. The city-at-a-time options are intended as more affordable alternatives for companies with pockets of "locally mobile" users, said Doug Brack-

brings users information, not just notification — "has

mostly been offered on a nationwide or regional

basis," said Gerry Purdy, a consultant and editor of the "Mobile Letter" newsletter.

designed their numeric paging offerings as local ser-

vice packages, but information-intensive applications

SkyTel and its competitors have traditionally

bill, senior vice president in SkyTel's Wireless Services Group here.

SkyTel's services will let users download Reuters news headlines and Dow Jones & Company, Inc. financial information and stock quotes. Also included are the filtering and forwarding of Lotus Development Corp. Notes messages and local net-based electronic mail. Until recently, enhanced paging — or paging that

million pagers nationwide, and of those, 5% are used for nationwide services. The other 95% are used for local or

There are 16

95% regional services.

Locally mobile

have emerged to satisfy the knowledge worker needing nationwide geographical coverage, Purdy said.

At government contractor ISX Corp., 30% to 40% of the company's paging needs are local, said Thomas Nussmeier, senior systems engineer who attended last week's Wireless DataComm Spring 94 show here.

The Westlake Village, Calif., company recently turned to SkyTel rival MobileComm, Inc., a leader in nationwide/local enhanced paging, to get the combined services at the lowest price, he said.

While Brackbill declined to give prices for Sky-

Tel's local services, Purdy said a nationwide service is typically five times the cost of a local service, depending on options.

This means customers wanting to stick with a single service provider for citywide services could be paying for unused coverage, Brackbill said. SkyTel already offers Local Plus, which allows users to choose regions of service

that stretch, say, over a few states; but the new services will target more narrowly defined areas.

A more granular option, said Robert Rosenberg, president of the Insight Research Group consultancy in Livingston, N.J., has been to turn to different carriers — such as the regional Bell holding company paging subsidiaries — for local packages, thus incurring a mix of service providers.

Start-up to offer faxback service via 555 numbers

BY DAVID ROHDE

Portland, Ore.

A service bureau has been established here to help firms provide fax-on-demand services using new, easy-to-remember phone numbers.

The company — dubbed 555 FAX Information Telco, Inc. — will procure seven-digit telephone numbers starting with the digits 555. Callers who dial these numbers will be able to receive faxed information developed by the service bureau's clients, such as product specifications and marketing information.

Bell Communications Research is to start



Seven-digit numbers starting with 555 are assigned to individual organizations and work without dialing an area code, either nationally or across a region.

assigning 4,000 of the 555 numbers starting Friday (NW, June 20, page 38).

The first clients of 555 FAX Information Telco - also known as 555-FAX-IT - are "major suppliers of high-tech products," said President Alan Lewis. Although he would not reveal who they are, "all of them are highly recognizable names," he said. Clients using 555-

FAX-IT will forgo the immediate opportunity to earn money with their 555 services, the way several newspapers hope to do with this type of service. Instead, 555-FAX-IT itself will earn revenue at rates specified in a tariff it recently filed with the Federal Communications Commission.

Because more than one firm is likely to be included under a 555 number, charges entail a flat \$1 fee for a caller to choose from a directory, 50 cents to "transfer" to the desired company's information services and 65 cents per minute for the information to be faxed back.

The client still comes out ahead compared to other faxback services because the service bureau pays for the connection to the caller's fax machine, according to Kelly Daniels, president of Telco Planning, Inc., based here, and a consultant to 555-FAX-IT. Daniels is also a member of the subcommittee of the Industry Numbering Committee that developed the 555 number assignment guidelines for Bellcore.

For companies that want to set up their own fax-on-demand service, 555-FAX-IT charges \$10,000 per installation to procure a number and help obtain equipment.

Daniels said he wants to get 555 off to a good start by having it associated with legitimate information providers. That way, businesses will not be tempted to block employees from calling the numbers the way they did with 900 and 976 numbers. With that in mind, the tariff filed by 555-FAX-IT forbids use by any service designed for "entertainment purposes."

Blocking 555 calls may seem unlikely because it would scotch attempts to call 555-1212 for directory assistance. But Daniels said it is still a threat as phone companies' evolving Advanced Intelligent Network capabilities are making it easier to block smaller groups of numbers rather than a range defined by the first three digits of a seven-digit number.

ISDN

Continued from page 21

virtual call center application up. And Bell Atlantic has sent staff to Schwab's New York offices to study how the firm is redesigning its business processes. The carrier is working with Schwab's developers to turn the virtual call center idea into an in-house product.

Along with increasing support for D-channel packet services, carriers need to work on 64K bit/sec connections for ISDN in the wide area, according to Stan Kluz, chairman of the California ISDN Users Group.

Too many common channel signaling implementations do not support ISDN; in-stead, they rely on inband signaling at the price of 8K bit/sec per ISDN B channel, he said.

As a result, ISDN's 64K bit/sec bearer channels are often cut back to 56K bit/sec for widearea transmissions, and ISDN users find themselves isolated to 64K bit/sec islands, with 56K bit/sec links as the only bridges in between.

"We need 64K going absolutely everywhere," Kluz said. "Having a mix of 64 and 56 causes tremendous pain."

In videoconferencing applications, for ex-

ample, equipment must be synchronized to a single speed. If users have to standardize on 56K bit/sec for each of their two ISDN B channels, they've given up a total of 16K bit/sec on a BRI ISDN connection, resulting in a significant drop in picture quality, he said.

Without common channel signaling support for ISDN, it also takes from 10 to 20 seconds to establish a connection vs. one second or less with it, Kluz said. Further, most customer premises equipment initially tests for a 64K bit/sec connection before falling back to 56K bit/sec, slowing setup times, he said.

RBHCs are implementing common chan-



nel signaling support for ISDN on an asneeded basis, according to Karen Fitzgerald, director of ISDN product management at Bell Communications Research. As demand for such applications as videoconferencing grows, that support will accelerate, she predicted.

Getting reliable ISDN service and support is another issue that still rankles users. "There is an education process...which needs to be continued and accelerated so that when somebody calls for ISDN information, they get it," said Jeffrey Fritz, a telecommunications engiAtlantic has tariffed ISDN as a business service, and the price is far too high for the school's telecommuters, he added.

"One professor said, 'I can blow off \$25 worth of lunches a month to pay for my ISDN line at home, but there's no way I'm going to blow off \$80 worth of lunches,''' Fritz said.

That problem could be solved before long. Bell Atlantic plans to file residential ISDN tariffs throughout its region in the first half of 1995, said Steve Cronemeyer, Bell Atlantic's business sales manager in West Virginia. Provided that those rates are reasonable, no pro**DATA SERVICES**

MFS Datanet magnifies frame relay to 6M bit/sec

BY BILL BURCH

San Jose, Calif.

MFS Datanet, Inc. has given frame relay a shot of adrenalin with the launch of a 6M

MFS Datanet's Frame Transport Service will be priced around 10% less than services from the Big Three carriers and will run over the MFS Datanet 45M bit/sec Asynchronous Transfer Mode (ATM) backbone, providing access in 18 domestic cities and London.

Running over the ATM backbone will mean fewer frames discarded as a result of contention for circuits, according to Bob Barbour, MFS Datanet director of marketing services. Also, when the time comes for a switch to ATM, users will be able to stick with a single carrier, he said.

Within a metropolitan area, MFS Datanet will tie in customers beyond the reach of its fiber rings using Larscom, Inc.'s Mega-T 401 inverse multiplexers to pool traffic over four T-1 lines.

For users, the new service should be particularly handy for applications such as connecting a host processor to a frame relay cloud, enabling it to support links to numerous remote devices, according to analyst Arthur Henley, vice president of Telecom Technologies, Inc. in Richardson, Texas.

Whether users' customer premises equipment will be able to handle those higher speeds is debatable. If a router has a High Speed Serial Interface (HSSI), it can, in theory, drive a 6M bit/sec line, said consultant Tom Nolle, president of CIMI Corp. in Voorhees, N.J. However, few users have routers equipped with HSSI interfaces or data service unit/channel service units capable of handling 6M bit/sec, according to Nolle.

In addition to MFS Datanet, the Frame Relay Forum is working on higher speed frame relay, as well. By the end of the year, the forum expects to be ready with a specification for T-3 and fractional T-3 frame relay services, accord-

ing to Frame Relay Forum President Alan Taffel.

But not everyone is convinced that there will be much demand for high-speed frame relay. Only users combining voice, video and data on a link will need T-3 connections, and that sort of multipurpose link will run best on

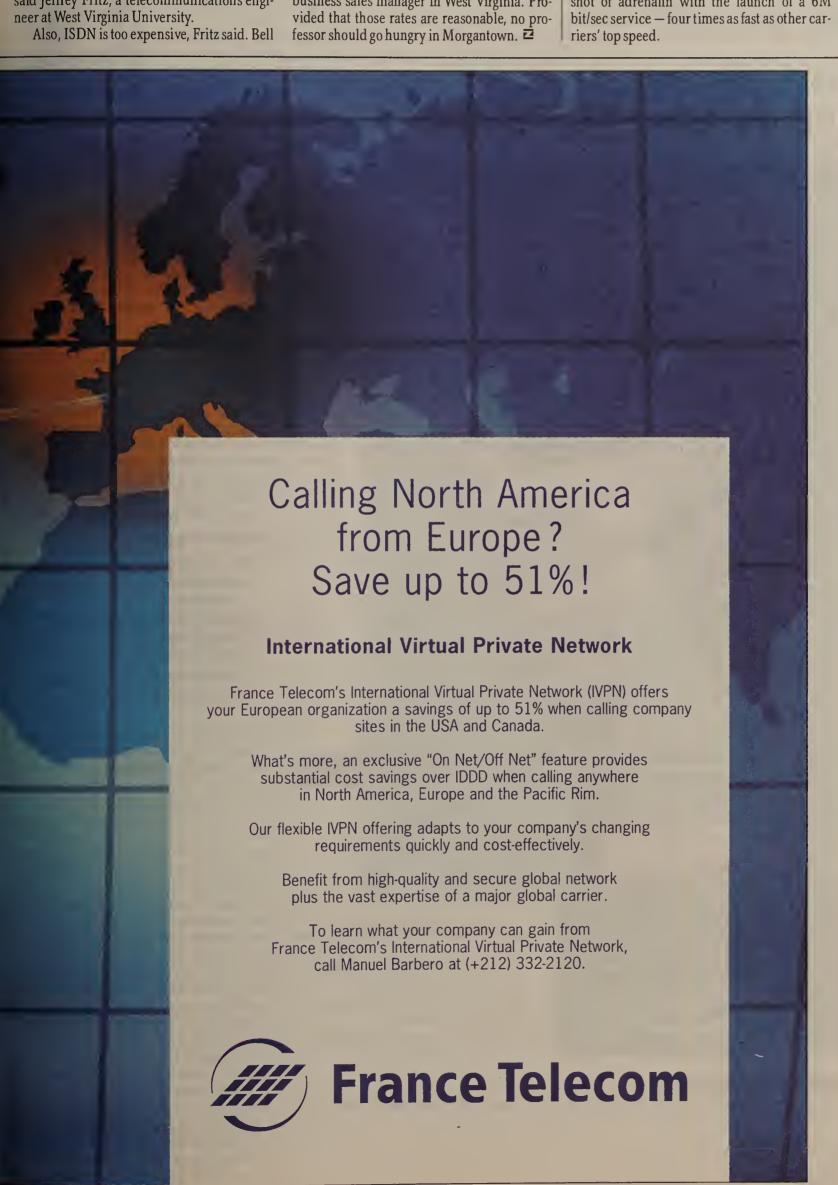
For users, the new service should be particularly handy for applications such as connecting a host processor to a frame relay cloud.

ATM, according to Henley. Most frame relay nodes today are running below T-1 speed, and only a few major nodes need anything above T-1, he said.

Dan Miotti, a telecommunications manager at Andrew Corp. in Orland Park, Ill., has found that speeds less than T-1 are adequate to connect remote users to his host.

"I really don't have a need for [6M bit/sec service] at this point in time," Miotti said.

Taffel sees demand for high-speed frame relay differently. Users will find that it will be cost-effective for connecting ATM and fast Ethernet networks, he predicted. As for multimedia, most companies still just need data connections and should not have to pay the network overhead for ATM, he added. Z



RATE & TARIFF MONITOR

by Eric Paulak

Isaac Newton revisited

or every action, there is an equal and opposite reaction. Sir Isaac Newton came up with that principle 300 years ago. And while he meant it to apply to physics, it holds true today in telephone pricing, as well — the only problem is that it shouldn't.

What's happening is the Bell companies have for the fourth straight year reduced the access connection fees that they charge the long-distance carriers.

And as an equal and opposite reaction, the major long-distance carriers - AT&T, MCI and Sprint — have just gone through another

What doesn't make sense is that telephone pricing is not physics; it's economics. With access costs consistently going down, supply and demand should kick in and long-distance rates should likewise go down, or at least hold steady. Before 1990, this is what always happened.

Instead, AT&T, MCI and Sprint have instituted three major rate increases since August 1993, amounting to a 12.5% hike in most switched access costs over this time last year.

Meanwhile, BellSouth has lowered its interstate access charges by \$33.7 million in its most recent FCC filing. (LECs are required to file their access tariffs with the FCC twice a year, to be effective in January and July.)

This is one of the largest single company access rate reductions. Last year's filings for all 1,500 of the LECs in the country only amounted to a rate reduction of \$256 million.

So why are the laws of physics applying to telephone pricing instead of the laws of eco-

Long-distance carriers have been funneling more and more of their traffic from the local end over dedicated lines instead of using the public switched network. Why? Dedicated access lines allow any amount of traffic for a fixed



monthly cost, whereas switched access lines are usage-sensitive and users are charged by the minute.

This hadn't been a problem in the past, because the interexchange carriers still had to get their dedicated lines from the LECs. But as competitive access providers, cable companies and others get in on the act, fewer of these dedicated lines are being provided by the LECs, so the LECs are losing money.

As a result, the LECs are doing whatever they can to stem this flow and, if possible, get some of the lost traffic back. More importantly, they're positioning themselves so that when the switched access market is opened, they won't be at a competitive disadvantage like they were when the private-line market first opened up.

So does that mean the long-distance carri-

So why are the laws of physics applying to telephone pricing instead of the laws of economics?

ers are to blame for confusing nomics and physics? Ask them, and they say their rate increases were due to the "increased cost of doing business."

But that's just not true. As we revealed before

(NW, May 23, page 28), AT&T's operating costs are not going up. The carrier may have told the public that in press releases, but in its annual report to stockholders, AT&T reported that operating costs had gone down.

So why is physics the driving force here? Maybe it isn't. The upswing in long-distance rates came at the same time the FCC abandoned rate-of-return limits on AT&T and, instead, instituted price caps.

When it was under rate-of-return limitations, every time AT&T's access costs went down, its rates had to follow suit to keep within the maximum allowable return. Two weeks after the new access tariffs were in, you always saw new AT&T tariffs.

With price caps, however, AT&T is free to make as much as it can squeeze out of the market. But with its market share shrinking, AT&T has less to squeeze from. In order to just maintain, the carrier has to squeeze harder where it can, leaving business users to pay the price.

→ Paulak is associate publisher with the Center for Communications Management Information, a provider of rate and tariff information in Rockville, Md. He can be reached at (301) 816-8950, Ext. 327.



for a complete seminar outline and registration form. When prompted, request document #55.

CLIENT/SERVER APPLICATIONS

Distributed Databases, Messaging, Groupware, Imaging and Multimedia

WINDOWS APPS

D&B brings human resources to desktop

BY KEVIN FOGARTY

Dun & Bradstreet Software last week announced a new local-area network version of its client/ server-based human resources application that boasts more of the power and flexibility that is built into its Unix and host-based soft-

TotalHR is a Windows version of the LAN-based application software that D&B Software previously sold just for DOS systems. The application is designed to work over both Novell, Inc.'s Net-Ware and Microsoft Corp.'s LAN Manager nets.

HRMANAGEMENT

The application includes modules for payroll, personnel and benefits management, all of which can work together so that a change in any one application will be reflected automatically in the others.

The software is written in Microsoft's Foxpro application development language and comes bundled with a run-time version of the Foxpro database.

D&B Software does not provide

with any other databases in particular but does enable users to link TotalHR to databases other than Foxpro via Microsoft's Open Database Connectivity specifications.

Windows version of TotalHR has all of the same functions as the DOS version but has additional capabilities, as well, and is easier to use, said Louis Ledee, personal computer specialist at Cape Canaveral, Fla.based Premier

beta version of the new product.

"We're really looking at [in-

stalling the Windows version] as a migration to a completely new payroll system," Ledee said.

The DOS version, which the company currently uses, is written in Microsoft's Clipper language. That makes it very difficult to customize the screens, reports and data structure, he explained.

FOXPRO FLEXIBILITY

TotalHR features:

Runs on Intel

486-based

server under

Windows 3.1.

payroll, human

resources and

Supports Object

Embedding and

Linking and

Lets users track

job openings

candidates.

and find eligible

Has integrated

benefits

modules.

ODBC.

The Foxpro version is still reladrivers to let the application work tively static but allows for more

flexibility in screen design, and it allows users to define an unlimited number of employee groups to be tracked with the software.

The Foxpro version also runs faster than the Clipper version because Windows allows TotalHR to make more efficient use of a PC's extended memory, Ledee said.

Ken Sawyer, vice president of human resources products for D&B Software, said TotalHR is

Cruise Lines, which is testing a designed to address not the company's traditional high-end cli-See D&B Software, page 27

Users are hopeful about the future of Open Ingres

BY BARB COLE

Islandia, N.Y.

Nearly two months after Computer Associates International, Inc. (CA) announced its intent to purchase The ASK Group, Inc., users said they are sticking by ASK's Open Ingres database technology and are hopeful that it will

> remain competitive (NW, May 23, page 10).

Users are confident that CA will continue to devel-

Ingres insights

happened if there was no

acquisition? Would there

North American Ingres Users

"There's nothing wrong

with Open Ingres. There's

Crystal Semiconductor Corp.

superior, to Oracle and

Sybase [products]. The

part of the market. ""

Database Management

Nikola Vancas

Technology, Inc.

President

potential is there for this

product to garner a good

a lot wrong with the

market presence. ""

44Open Ingres is

competitive, if not

What would have

even be an Open

Ingres? "

Kitty Weaver

President

Association

Greg Belt

MIS manager

op the Open Ingres product line but are concerned that the company will have trouble rebuilding a dwindling user base for the software.

"Open Ingres does not have a problem technologically," said Gordon Elliott, an Open Ingres user and associate director of accounting at Swiss Bank Corp. in New York. "The problem has always been getting people to know who [ASK is]. Presumably, CA will have a positive influence and get the Open Ingres technology in the hands of customers."

Users said they have watched Oracle Corp., Sybase, Inc. and Informix Software, Inc. woo a substantial number of Open Ingres users away through savvy marketing during the past few years. They believe that a large installed base bodes well for third-party product development and helps persuade

management to use the software.

Greg Belt, MIS manager at Crystal Semiconductor Corp. in Austin, Texas, is cautiously optimistic about the change in Open Ingres' ownership.

"I'm a little uneasy about it, but I have no plans to switch," Belt said. "I'd really like to see [CA] market the product and succeed."

Michael Hunt, senior systems analyst at Public Broadcasting Service in Alexandria, Va., said his company is

committed to Open Ingres because it is technologically strong.

The deal under which CA acquired ASK for about \$309 million was finalized on June 24. A CA official said the firm is committed to Open Ingres, ASK's the Open Road application development tools and the needs of those products' users.

"Open Ingres and Open Road will play an important role in our strategy," said Predrag Dizdarevik, senior vice president of development at CA. He said it is too soon to discuss that strategy but said CA began a large advertising campaign for Open Ingres last week.

CA has already begun trying to put

Open Ingres users at ease. The night that the acquisition was an- nounced, CA President Charles Wang met with Kitty Weaver, who is president of the North American Ingres Users Association (NAIUA) and other members of the group in Alameda, Calif.

"We got personal assurances of CA's commitment," said Weaver.

While most users are hopeful, there has been some concern. Users fear that ASK employees, particularly the technical staff, may not join CA. And they are worried that this could hurt product development.

"There are bound to be people leaving who have worked with the product for years, but if product engineering

placed responsibility for development of key features in the hands of individuals as opposed to a team, maybe it is time this changed," Weaver said.

Analysts said Open Ingres is topnotch database technology, citing its replication server, ability to access legacy data and distributed capabilities as strengths. But the technology's success hinges on CA's ability to market and continue developing it, they said.

OCA: (516) 342-5224.

BRIEFS

Lotus Development Corp. of Cambridge, Mass.,

Lotus: (617) 577-8500.

Popkin Software & Systems, Inc. of New York last week announced enhanced database connectivity support for its application development tool set. Its System Architect software now has an editor for defining and building database triggers, which are procedures that can be run whenever a change is made to a database table. Popkin will add support for Microsoft Corp.'s Open Database Connectivity (ODBC) specifications for connecting clients to back-end databases.

The software initially supports triggers for Sybase, Inc. SQL Server and Microsoft ODBC support will be added to the System Architect Reverse Database Engineer this month and to the System Architect Schema Generator this year. System Architect starts at \$2,940 for a two-user license for the Windows net version and \$3,790 for an OS/2 license.

Popkin: (800) 732-5227.

FileNet Corp. last week announced that it would port its document imaging application to Sun Microsystems, Inc.'s Solaris operating system. The company's Image Management Services software should be released during the first quarter of next year. Prices have not yet been determined.

FileNet: (800) 345-3638

Restrac of Dedham, Mass., last week announced new charting and document management features for its human resources management applications. Restrac Enterprise's planning component now has the ability to build charts, and its new Candidate Finder feature for quickly locating resumes and employee records across a net.

The software runs on Windows clients and a back-end servers and databases, including those from Gupta Corp., Oracle Corp. and Sybase, Inc. Restrac Enterprise ranges between \$40,000 and \$1 million, depending on the size and nature of installa-

Restrac: (617) 320-5351.

Decathlon Data Systems, Inc. (DDSI) of Boulder, Colo., recently announced a groupware package based on Novell, Inc.'s UnixWare operating system. The firm's Goldmedal WorkGroup software includes electronic mail, scheduling and calendaring, as well as an application for sharing and building documents across a net. It is bundled with the personal edition of UnixWare, starting at \$395.

DDSI: (303) 440-9000.

last week said it would pay \$62 million in cash to buy messaging switch vendor SoftSwitch, Inc. of Wayne, Pa., rather than acquire the company through a stock swap as originally planned.

The initial stock plan foundered after Lotus stock crashed two weeks ago following news of reduced earnings and a delay in shipments for a new version of its desktop applications suite.

Cincom partners with UniSQL to boost database object support



BYBARBCOLE

Bosto

Cincom Systems, Inc. and UniSQL, Inc. last week announced a strategic relationship designed to bring object database technology

more into the mainstream.

Under the partnership, the companies will build a product combining UniSQL's Object Relational Database Management System (ORDBMS) with Cincom's Supra Server. While the companies declined to provide specifics on the product or to say who would sell it, they did say the product will be ready by year end.

Object-oriented databases are better than relational databases at handling complex data, such as multimedia applications. But object databases have only caught on in a few industries, such as the petroleum market.

Users of Supra Server and ORDBMS were enthusiastic about the alliance, which was made at the Database & Client/Server World conference here.

"We'd like to have object-oriented capabilities built in our relational database rather than a separate object database," said Cincom user Sam Smith, MIS manager at Sonoma County Water Agency in Santa Rosa, Calif.

The UniSQL ORDBMS is designed to let systems administrators treat different databases like objects, making it easier for end users to access data across a net, said Albert D'Andrea, director of marketing at the Austin, Texas, firm.

"I can take data from around the organization with different underlying data models and put that data in a central data model" based on UniSQL technology,

D'Andrea said. "This gives administrators a common view to all their data," he added.

There is a huge amount of data that does not fit in the relational model, D'Andrea said. In addition, object databases make it easier to distribute databases because they are viewed like objects, he said.

Tom McLean, vice president of Cincom's systems technology group, said the product developed from the alliance "will help transition users from relational databases to object-oriented databases."

User demand for object-oriented capabilities is relatively low today, but it is expected to increase, McLean said.

Analysts said the agreement reflects a growing trend of database vendors incorporating object technology into their servers. The analysts' opinions varied concerning the demand for object databases.

John Rymer, vice president of Patricia Seybold Group, Inc. in Boston, said object database technology is valuable on its own but needs the resources of established vendors to garner widespread support.

Last March, UniSQL and Digital Equipment Corp. announced that Digital would integrate UniSQL ORDBMS as a value-added component to its line of Alpha AXP Unix servers running OSF/1.

Last January, IBM said it would resell Object Design, Inc.'s ObjectStore database.

©Cincom: (513) 662-2300; UniSQL: (512) 343-7297.

Comments?

See "Contacts" box on page 2.

PeopleSoft invests in new financial apps extensions

Financials

statement

Support for IBM's DB2 and Digital's

Enhanced reporting capabilities

Batch processing

on either client or

Rdb databases

Version 2.2 features:

BY ADAM GAFFIN

PeopleSoft, Inc. has announced enhancements to its client/server-based financial applications, including support for additional back-end databases and new report writing capabilities.

PeopleSoft Financials 2.2 is the newest edition of PeopleSoft's Windowsbased software for general ledger, accounts payable, accounts receivable and asset management applications.

The software adds support for

IBM's DB2 and Digital Equipment Corp.'s Rdb databases, which clients can access via SQL statements.

The company also announced plans to support Sybase, Inc. System 10 databases via its applications at an unspecified point in the future.

The PeopleSoft Financials software already can work with Oracle Corp. Oracle7 and Gupta Corp. SQLBase databases.

The new software also adds support for PeopleSoft's nViion and Query technology, which allows managers to develop financial and management reports as well as analyze data and build database queries through graphical interfaces.

A new batch processing component allows for automatic generation of reports and processes from either client or server systems.

Pricing for PeopleSoft Financials starts at \$66,000 per module.

SQL FINANCIALS

In a separate announcement, SQL Financials, Inc. last week announced

that it is adding support for the Oracle7 database to its client/server financial application.

SQL Financials already supports versions of SQL Server from Sybase and Microsoft Corp. as well as Gupta's SQL-Base.

The company plans to ship the new Oracle ver-

sion this month.

Pricing for an Accounts Payable module starts at \$60,000, while General Ledger and Accounts Receivable modules start at \$75,000 each.

© PeopleSoft: (510) 946-9460; SQL Financials: (404) 390-3970.



D&B Software

Continued from page 25

ent/server and host-based customers, but rather those trying to save money by keeping core management applications running at the LAN level.

D&B Software is beginning to focus more energy on developing for and marketing to mid-level users.

The product is designed for organizations with 200 to 5,000 users, Sawyer said.

D&B Software is beginning to focus more energy on developing for and marketing to midlevel users, said Jennifer Scholze, analyst at International Data Corp., a market research firm in

Framingham, Mass. Developing a completely new TotalHR in a new language and selling it through value-added resellers (VAR) rather than via a direct sales force are strong signs that D&B Software is taking LAN and departmental users seriously, she said.

For the first time, D&B Software will sell a product through VARs, rather than through its direct channel. CDG and Associates, Inc., The Compass Group, Inc., Computer Marketing & Consulting Services, Inc. and The Pinnacle Group, Inc. will all carry the product.

Pricing for the payroll module, available in August, starts at \$30,000. The personnel module will be available the same month starting at \$20,000, while the benefits module will be available next year for an asyet undetermined price.

The new software requires a 486-based machine with 8M bytes of random-access memory and Windows 3.1.

©D&B Software: (800) 234-3867.

Lumberyard chain nails down savings with client/server

System provides easy database access to employees.

BY ADAM GAFFIN

Bosto

Grossman's, Inc. could not afford to lumber into client/server computing.

The Braintree, Mass.-based chain of home supply stores and lumberyards was faced with the imminent arrival two years ago of a much larger rival, The Home Depot, Inc., that pledged to aggressively pursue the New England market where Grossman's thrives.

Company officials decided that they had to quickly hammer down costs, boost productivity and better target large customers to stave off Home Depot.

Grossman's turned to client/server computing as the cornerstone of a major process reengineering project.

Michael Bergman, corporate vice president and director of MIS for the chain, which has 100 stores across New England, said that two years after the chain started moving mission-critical applications from mainframes to client/server systems, it has achieved some concrete gains.

He detailed the effort during a session at the Database and Client/Server World conference here last week.

By automating inventory and sales-quoting functions, the chain has cut its per-store

payroll for stock and pricing clerks in half, Bergman said. An automated inventory system linked to an electronic data interchange application lets the company better manage its merchandise, he said.

CASH REGISTER CHANGE

The chain started the changeover with its cash registers, replacing them with Intel Corp.-based 486 machines running OS/2,

Keys to the move

Pick a small number of tools, applications and platforms, and then stick with them, rather than forever experimenting with newer products.

Give clients multiple ways to access data so end users can pick a way that is most comfortable and efficient for them.

Select MIS employees adept at learning on their own; there may be few places they can go for help.

GRAPHIC BY SUSAN J CHAMPENY

connected to a local OS/2 server running a DB2 database. Local servers are connected across a wide-area network to the corporate

mainframe in Braintree, which runs DB2 and CICS.

This setup allows cashiers and salespeople to quickly do everything from looking up credit histories to offering discounts on damaged materials. Before, such tasks often involved making time-consuming telephone calls.

The mainframe retains a central role as a data repository for the network. This gives all stores and central managers easy access to key information, Bergman said.

When a cashier keys or scans in a product code at the cash register, the system sends an SQL request to the local server. If the server does not have the information, it then queries the mainframe and passes the data back to the register.

MIS designed the client system so that every function could be performed two or three ways, whether through function keys, pull-down menus or buttons, so that each employee could pick the way they were most comfortable working, according to Bergman.

TRAINING TIME REDUCED

The client is so easy to use that training time for cashiers has been cut from 16 hours to one or two — a significant savings given that the chain goes through several thousand cashiers a year — Bergman said.

He acknowledged that there were some splinters along the way, most relating to changes the new systems forced on the way people work. Z



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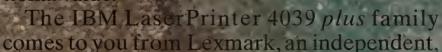
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EDITORIAL

ATM a pivot point for IBM

For IBM, ATM isn't just a new technology. It's the company's best hope for regaining some real measure of control over the network.

Don't get me wrong. IBM is a giant network company, selling billions in hardware and software each year. But IBM no longer sets the standards, nor does it control the choke points in the distributed networks being built today.

SNA is in decline, and it's unclear whether IBM's emerging network standards will be widely adopted by customers. Ominously, users who participated in the recent IT User Summit, sponsored by this newspaper and Bostonbased Northeast Consulting Resources, Inc., agreed that all of IBM's "grand architectures" will fail in the future — even while some voiced concern about IBM's inability to set standards.

While corporate America still employs its mainframes and SNA network gear, IBM doesn't own any of the key client/server markets: desktop and network operating systems, databases, messaging, routers, hubs, etc. IBM has some great technology and plenty of products, but control over the network rests in the hands of Microsoft, Novell, Oracle, Cisco, Lotus and others.

These companies have the market share; they set the pace. IBM, in many

ways, has to rely on them to establish its new standards.

Mainframes and SNA nets gave IBM a stronghold from which to fan out and control the customer site. IBM needs that type of position once again, and ATM could be the key to establishing it. ATM is clearly going to be a dominant technology in next-generation networks, and, as yet, no single vendor holds sway.

If IBM is smart and establishes itself as a leading supplier of ATM gear from the desktop to the premise switch — it will have the jumping-off point it needs to grab a big chunk of the new enterprise and drive its network plans.

Whether IBM can do that hinges on two things it doesn't do very well right now. One is to be a price leader and drive the cost of ATM networking down fast. Aggressive pricing could make users leapfrog interim technologies, such as Ethernet switching or fast Ethernet, and move to ATM right away

On the pricing front, things look promising, at least based on what we saw

in IBM's ATM rollout last week.

The bigger issue is resolve. Customers these days are confused about IBM's network message — or, more to the point, messages — and complain that the company is trying to be all things to all people.

It's not at all clear that IBM is aggressive enough or even willing to push ATM products as paramount to its many other offerings, such as Token-Ring or

even older SNA products.

If IBM isn't willing to cannibalize itself, as it were, other companies surely will. And IBM will miss an unprecedented opportunity to get back what it is now losing: control of the network.

→ JOHN GALLANT

jgallant@world.std.com

TELETOONS

FRANK AND TROISE

The Future of Networking Episode 26 April 24, 1995 The Fensters, a retired couple from Vernon, Florida, supplement their incomes by competing for government contracts through an EDI gateway over multiple value-added nets. RALPH! WE'RE LOW BIDDERS ON A RUSH CONTRACT FOR HIGH-EXPLOSIVE ARTILLERY SHELLS!

REALITY CHECK

by Thomas Nolle

Frame relay differences make price comparison futile

o be a smart shopper, you need to know two things: how much money something costs and how much of that something you would get for your money. With frame relay service today, users often don't get that vital second piece of information. As a result, most comparisons of frame relay pricing are flawed.

The problem comes from our familiarity with digital services. With leased lines, you buy capacity and availability, and it's easy to compare prices because every carrier's offering can be reduced to these two factors. With services like frame relay, whose perfor-

mance takes a number of often-interrelated parameters to define, comparisons would be more difficult even if carriers provided full disclosure on their net performance — which they don't.

There are several reasons for this difficulty in comparing the prices of frame relay services. First, the carriers aren't selling frame relay based on standard parameters.

According to the frame relay standards, frame relay service is defined by a committed information rate (CIR),

which is the average data rate over time; committed burst size, which is the maximum size of a single traffic burst; and burst excess, which is the amount of data the net agrees to try to carry in addition to the committed burst. But when most users buy frame relay services, they buy a CIR only. The carriers set the values for committed burst size and burst excess, and are inconsistent in the way they define CIR. I know of situations where a user has provided traffic figures to three carriers and has gotten three totally different CIR recommendations.

A frame relay service with a CIR of 56K bit/sec and a committed burst size of 10,000 bits would allow a user to send data continuously for nearly two-tenths of a second. The same CIR, with a committed burst size of 1,000 bits, would only let the user send for two onehundredths of a second. Would the first service be worth more to your network than the second? If so, it would be nice to know which of the two your carrier

Second, CIR, committed burst size and burst excess don't define a frame relay service completely. Frame relay networks, like any network based on data multiplexing, may introduce some transmission delay. Networks minimize delay accumulation by discarding frames when the network becomes congested. But how much delay is normal? How much delay can accumulate until discarding begins? How many frames will be discarded? Carriers don't tell you these things, either.

Network delay can kill many applications. The maximum effective data rate that a given protocol can utilize is determined not only by the speed of the connection, but its delay. There's a formula: Delay-limited transmission speed equals protocol window size, divided by network round-trip delay. If an application has a window size of 16,000 bits, a network delay of 200 msec will limit the application to 80K bit/sec, no matter how fast we make the line. A delay of 50 msec would allow the application to run at 320K bit/sec. Would that be worth more to you?

How about discards? Every time a frame is discarded, the protocol's error recovery mechanism has to get it retransmitted. In fact, with many protocols (including Systems Network Architecture), the error recovery process may retransmit several frames for each one lost. This reduces the effective performance of the connection. Under certain conditions, a discard rate of one frame in 10 would result in no communications at all. A rate of 1 in 10,000 might not be even noticeable. Which is worth more to the network user?

When users compare frame relay pricing today, they are in the same position they'd be if they were shopping for beans based on price per can and not price per ounce. There is no assurance that the cost

> they're being quoted represents the same service capacity, so comparing carriers' pricing isn't necessarily going to tell them anything.

> In fact, there are significant differences among the carriers in the way they implement their frame relay networks. Frame relay services based on one switch architecture may be so different from those based on another that users would immediately see the difference. That may be why MCI Communications Corp. recently decided to keep its

BT North America, Inc. frame relay users on the BT equipment rather than convert them to MCI's net-

work (*NW*, April 18, page 34).

What can users do about this? Insist on a service level agreement (SLA). An SLA is a contract between the user and a carrier that obligates the carrier to deliver specific service levels, based on defined parameters. Every frame relay user should require an SLA be part of a frame relay bid and should write the SLA into the service contract upon award.

The SLA should define the CIR, committed burst size, burst excess, delay, discard rate and allowed variations on the base values. It should also entitle the user to be reimbursed by the carrier for days when the service does not meet the terms of the SLA and to cancel the contract at the user's option, should the problem persist for an agreed-upon period.

Even SLAs won't solve all of the problems with frame relay service specifications. Most user network management systems can't collect enough information to enforce an SLA, and most users are understandably reluctant to let the carriers police the agreements. Test programs for remote network testing equipment can certify a carrier's performance and can also determine what performance carriers are delivering when there is no agreed-upon service specification. However, few users have the equipment to run these tests, and not even all test equipment vendors know how to carry them out.

Most frame relay users today probably don't have problems with their frame relay service, though some are not getting the best service they could obtain. As more mission-critical applications move to frame relay networks, optimum price/performance is likely to be much more important to users, and leveling the playing field by getting all the network performance parameters defined is the only way to achieve it. Carriers, management systems vendors and test equipment vendors will have to get the message — from users.

> Nolle is president of CIMI Corp., a technology assessment firm in Voorhees, N.J. He can be reached at (609) 753-0004 or via MCI Mail at 349-5845.

USER FORUM

by Eddie Rabinovitch

NetView's not just for SNA anymore

IBM's announcement of its plans to reinforce NetView with enhancements such as new automation features (April 18, page 1) is good news for today's enterprise network users. Many traditional IBM shops are not "pure Blue" anymore. The new automation facilities will enable Net-View to play a central role in automating not only pure SNA networks, but these multivendor, distributed networks, as well.

Almost 50% of all mainframe sites run at least one automation package. However, users' ongoing shift to local-area networks and Unix-based

systems means that new automation packages have to address these emerging technologies. The new releases of IBM's NetView Multisystem Manager/MVS, LAN NetView, NetView/6000 and Automated Operations Network (AON)/MVS are clearly a step in this direction.

Although some analysts have predicted NetView/MVS' imminent demise and replacement by

NetView/6000 or other Unix-based products, this probably will not happen in the next few years. IBM's decision to reinforce mainframe-based NetView will not only save some customer licenses, but also clearly demonstrate its intention to modernize this product, not abandon it. Users that invested in NetView-based automation by developing in-house, tailored Command Lists and Restructured Extended Executor (REXX) procedures in the good old pure-SNA days will be able to use similar tools in their multivendor, distributed LANs.

The modern network management arena sometimes reminds me of the prehistoric (that is, pre-NetView) SNA management arena in the mid-1980s. Although IBM was consistent in naming all of its network management products Net-View-something, the products clearly didn't share much except the name.

But now, if NetView Multisys-

tem Manager/MVS will be able to automatically create Resource Object Data Manager databases for all SNA, Transmission Control Protocol/Internet Protocol and LAN devices as IBM promises, that will be a significant step toward network management product integration. Moreover, if IBM makes LAN NetView and NetView/6000 functionally equivalent, that will be another important step toward network management integration and simplification. Such development will eliminate the need to have redundant management products for different components

on the same network, which is still the case today.

To overcome the 1980s' syndrome — characterized by an overabundance of SNA management products, each addressing a narrow area -IBM came out with an integrated solution, NetView. To overcome a similar glut of multivendor network management products today, IBM has

to provide a similar single integrated, multiplatform, scalable solution. Users will definitely benefit more from a single offering with diverse options than from numerous offerings with single options, such as AIX NetView/6000, AIX SNA Manager/6000, AIX NetView Service Point, System Monitor/6000 and Trouble Ticket/6000.

IBM's new AON/MVS includes very important functional enhancements for LAN and TCP/IP support. Replacement of the cryptic RUNCMD command, used by NetView today to control LAN Network Manager and Net-View/6000, with a much more user-friendly interface will definitely make life easier for many network operators and systems programmers.

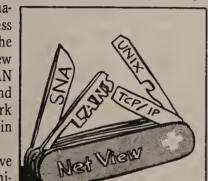
According to David Passmore, president of Decisis, Inc., "Some of the systems automation stuff that NetView does may be done by other applications that run on, say, [Hewlett-Packard Co.'s] OpenView" (April 18, page 80). Personally, I doubt that anyone is willing to accept partial solutions for mission-critical parts of the network. With the new NetView enhancements, it would be easier to use a reverse approach develop SNMP and LAN automation procedures under the host-based NetView.

When MIS is being asked to do more with less, automation can assist with answers. The best approach for automation implementation should be in phases, beginning with easier and more beneficial functions. Although products aimed at replacing NetView are running on much more politically correct Unix and PC platforms, even their authors admit that "customers [have not] pulled the plug on NetView, nor is that to be expected" (April 18, page 80).

IBM's reinforcement of NetView on host, LAN and Unix platforms will help to eliminate the hidden costs traditionally associated with network management for tasks such as maintenance and troubleshooting. The company is obviously serious in its intention to deliver a simple and consistent management vehicle for modern networks. This direction is certainly preferable to a collection of several loosely coupled products addressing separate components.

After delivering the promised NetView enhancements, what should IBM do next? The company should strive to integrate more of its network management products into a single offering. Also, IBM needs to provide tools that will allow integration between mainframe-based NetView and popular non-IBM network management products such as HP's OpenView, SunConnect's SunNet Manager and Novell, Inc.'s Net-Ware Service Manager. Or perhaps IBM should give users a good budgetary incentive to migrate to the enhanced NetView family. In the meantime, users will certainly be safe using NetViewbased automation in the near (and not-so-near)

Rabinovitch is a systems consultant with a major financial corporation in Jersey City, N.J.



Letters

Hack away

Regarding Mark Gibbs' search for an alternative to the term hacker (May 30, page 29):

How about ''cybersquares?' Let's hack the term hacker from the cybervocabulary.

Chuck Angelucci Financial analyst U.S. Department of Housing and Urban Development Arlington, Va.

Divarightin

How about Digital Diva (female), Digital Divus (male) or Network Nabob as alternatives to the term hacker?

By the way, I went looking for "The Hacker Crackdown" and discovered that info.umd.edu capitalizes parts of the directory names, so the path Gibbs gave (/inform/computing-resources/netinfo/readingroom/hackercrackdown) will not work as typed.

The actual path is /inforM/Computing - Resources/ NetInfo/ReadingRoom/HackerCrackdown. Starting at the point where I logged onto info.umd.edu, I used the Unix ls command to view the directory listing to determine the correct spelling of the next directory in the path, then used the change directory command, cd, to move to the directory. I then repeated the process until I arrived at the HackerCrackdown directory.

This wasn't so bad, since I got to see what else was available on the

Mack Lundy Library systems manager, Swem Library College of William and Mary Williamsburg, Va.

Keephacker

My sense is that the old meaning of hacker has not been lost but merely abused by some of the media. I say this because much of the time I see the word cracker used to describe those who pursue less honorable activities.

I believe it's not too late to retain hacker as a positive word, and I hope the effort succeeds. Thanks, though, for calling attention to the problem.

Michael Stack Systems programming manager Computer Center Northern Illinois University DeKalb, Ill.

How about chiphead?

I must take issue with some of the statements made in Mark Gibbs' column "Hackers revisited: definitions, ducks and ne'er-dowells". While I agree with his basic "Duck is a duck" theory, Gibbs seems to have the usages of several terms confused, as do some of his complaining readers.

Wizards and gurus frequently refer to someone as a hacker in much the same way an established writer might refer to an untalented novice as a hack - capable of putting words on paper and conveying a message, yet doing it in an inelegant manner. So these terms are not alternatives for hacker.

A hacker is also not a net.god — a term reserved for that select group See Letters, page 37

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Washington, D.C. Bureau National Place 1331 Pennsylvania Ave. NW, Suite 505 Washington, D.C. 20004 **HOW TO WORK SOME OF THE**

TIME

AND STILL LOOK

DEDICATED

(OF COURSE, WE'RE REFERRING TO YOUR DATA LINES.)



When you need to send data some of the time, but send it fast anytime, use fast packet services via The World Class Network SM

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SMDS and emerging ATM. You can
also access consultative services and
rely on us for all the necessary internetworking equipment. And through
our Network Operations Center,
we'll monitor your lines 24 hours a day,
seven days a week. Now that's dedication.

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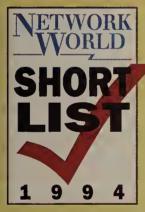
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Buyers guide

Pulling of government funding and an end to concern over Acceptable Use Policy fuel competition among Internet access providers.

By MARK GIBBS



Internet access providers

National IAPs

- Advanced Network and Services, Inc. (ANS)

 ANS Internet and WAN
 Connection Services
- Sprint Corp.

 SprintLink

Regional IAPs

- BBN Technology Services, Inc.

 NEARNET
- California Education and Research Federation Network (CERFNet)

CERFNet

Complete details about The Short List appear on page 33.

As

more commercial traffic crosses the Internet, a whole new set of Internet access providers (IAP) are hanging out their "open for business" signs and driving competition to ever higher levels.

It was just a few years ago that national IAPs emerged to offer businesses nationwide a viable and competitive alternative to government-funded regional providers.

Some of the regional IAPs, such as BBN Technology Services, Inc.'s New England Academic and Research Network (NEARNET) and the California Education and Research Federation Network (CERFNet), kept pace with national providers. These regional IAPs catered to commercial users to augment grants received from the National Science Foundation (NSF) to run various portions of the NSF Network (NSFNET), which currently forms the Internet backbone.

Other regional IAPs that continue to rely on NSF for the bulk of their revenue are ramping up to duke it out in what will effectively become a free marketplace next year. The free market will be created when NSFNET is dissolved and the grants that are doled out to operate it dry up. Clearly, with government subsidies ending and national IAPs growing in strength and capability, it will be sink or swim for many regional IAPs.

Along with the dissolution of NSFNET comes the official death of NSF's Acceptable Use Policy (AUP), which essentially prohibits commercial traffic from riding NSFNET circuits that interconnect nonprofit universities and research facilities. The value of retaining the NSF AUP has been under attack for some time — ever since the IAPs started using creative ways to route commercial traffic around NSFNET circuits.

One of the most creative ways to sidestep the NSF AUP was establishment of the Commercial Internet Exchange (CIX), a group of regional and national providers. CIX used a routing system that bypassed NSFNET links when commercial traffic was forwarded between CIX members, thus ensuring that commercial operations did not violate the NSF AUP.

Knowing now that there are services that do not violate the NSF AUP, firms just experimenting with Internet connections are preparing to do some serious business over the Internet. As these firms take the plunge, there is greater demand for commercial Internet service.

And this increased interest in commercial use of the Internet has prompted a large number of new local IAPs that serve limited areas to jump into the market. But these new local IAPs typically don't have what it takes to satisfy large businesses. Rather, they cater to small businesses requiring access links that operate at less than 56K bit/sec and expect minimal support and customer service.

These changing market conditions present a mixed bag for users. On one hand, firms ready to take their initial plunge into the Internet will be able to choose from among a large number of business-hungry IAPs willing to cut a better deal than could be had just a few years ago. Even established commercial Internet users stand to benefit by reevaluating their current IAP in light of the competitive market.

On the other hand, the wealth of IAPs vying for attention makes the selection process a tad more difficult because users have to examine each IAP closely to make sure they can deliver the type of service they promise.

Indeed, business users have a broad range of connectivity

Continued on page 32

inside

- ► Charting a course through Internet access services. Page 32.
- Consider the remote possibilities.Page 34.
- How to ensure that your Internet affairs are stamped **CONFIDENTIAL** Page 35.
- ► Readers reveal what hooks them into the Internet. Page 36.

Internet access providers

Company	Service	Access method: Speed (bit/sec)	Transport protocol	Internet access protocol	Host provider	Help desk		Support	Multi- location contracts	Services provided					Security	Monthly price
		A = Analog F = Frame relay I = ISDN L = Leased line S = SMDS X = X.25	OS = OSI T = TCPAP O = Other	P = PPP S = Shell account SL = SLIP account U = UUCP connection O = Other	OW	MonFri. (hours)	Sat. & Sun. (hours)	H = Hot line N = Network Integration T = Trouble ticketing	A = Agency service S = Site negotlated	Gopher	HTTP server	FTP server	News server	Mail server	E = Encryption U = User authentication O = Other	Access method: A = Analog/Hourly dial-in rate F = Frame relay L = Leased line S = SMDS X = X.25
Advanced Network and Services, Inc. (ANS)	ANS Internet and WAN Connection Services	F: 56K-1.54M L: 56K-45M S: 1.54M-45M	OS, T, O	0	С	24 hour	24 hour	H, N, T	A	V		V		V	E, U (1)	F: ICB L: \$1,054-\$2,733 S: ICB
(800) 456-8267	ANS InterLock Service ANS Remote Services	L: 56K-1.54M A: 2.4K-32K	T	O P, SL	S	24 hour 9 a.m	24 hour	Н, Т	A						E, U, O	L: \$1,166-\$2,375 A: \$25-\$45/\$8.50
Advantis (800) 888-4103	Internet Interconnect for SNA Users	A: 9.6K L: 1.54M	Т, О	0	S	5 p.m. 24 hour	24 hour	H, N, T	A	V					U	A: \$55/\$4.45 L: \$850-\$4,800
AT&T (800) 248-3632	AT&T Internet Connectivity Options	X: 56K A: 14.4K (2) F: 1.024M- 1.536M	Т	SL	С	24 hour	24 hour	H, N, T	A						0	X: \$1,050-\$4,200 A: \$25-\$35/\$10.80 F: \$550 for 10 users
San Francisco Bay Area Regional Research Network (BARRNet) (415) 725-1790	Premier Internet Connectivity	A: 14.4K F: 1.54M L: 1.54M	Т	P, SL	С	9 a.m 5 p.m.		N, T	S		~	~	V	V	E, U, O	A: \$200/Unlimited F: (3) L: \$444-\$1,100
BBN Technology Services, Inc. (617) 873-8730	NEARNET	A: 14.4K F: 56K L: 45M	OS, T	P, SL	С	24 hour	24 hour	H, N, T	A	~	~	~		~	U, O	A: \$392-\$500/(4) F: \$633-\$2,283 L: \$633-\$2,283
California Education and Research Federation Network (CERFNet)	CERFNet	L: 56K-45M F: 56K-128K S: 1.54M-45M I: 128K	OS, T, O	P, S, SL	С	(5)			A	V	~	~	~	~	E, U, O	L: \$1,150-\$4,000 F: \$1,100-\$1,600 S: \$2,600
(800) 876-2373	Dial N'CERF	A: 14.4K	Т	P, S, SL		(5)		Н	Α	~	~	~	V	~	E, U, O	A: \$20/\$3-\$5 or \$250/Unlimited
Committee on Institutional Cooperation Network, Inc. (CICNet) (800) 947-4754	BitPipe dial-Midwest, dial-Midwest 800	L: 56K-1.54M A: 14.4K	T	P, S, SL	C, S	24 hour 9 a.m	24 hour	H, N, T H, N	A A, S	2	~	~	1	~	0	L: \$850-\$1,900 A: \$19.95/\$2.75- \$8.25
	Leased Line Access	F: 1.54M L: 56K-1.54M	OS, T, O		С	5 p.m. 24 hour	24 hour	H, N, T	A, S	~	~	~	1	~	0	F: \$1,000-\$2,000 L: \$1,000-\$2,000
Clark Internet Services, Inc. (800) 735-2258 Please ask operator to dial Ext. (410) 730-9764.	ClarkNet	A: 28.8K F: 1.17M L: 1.54M S: 1.1M	T	P, S, SL, U	S	(5)	(5)	N, T	S	~	~	~	~	~	U, O	A: \$23-\$120/ Unlimited F: \$1,000 L: \$1,000 S: \$1,000
Global Enterprise Services, Inc. (609) 897-7300	Host Connection Service	A: 14.4K	Т	S, SL, U	С	8 a.m 8 p.m.		H, N, T	A	~	~	~	~	~	U	A: \$199/Unlimited or \$29/\$5
Midwestern States Network, Inc. (MIDnet)	MIDnet Dial-up MIDnet Dedicated	A: 14.4K F: 1.54M	T	SL	C	8 a.m		T N, T	A			_	1	V	0	A: \$60/Unlimited
(402) 472-7600 Northwest Academic Computing Consortium, Inc.	NorthWestNet	L: 1.54M L: 56K-10M	Т	0	С	5 p.m. 8 a.m 5 p.m.		N	S	~	~				0	L: \$1,250-\$3,750
(206) 562-3000 Performance	InterFrame	L: 1.54M	Т	P	C	8 a.m	9 a.m	H, N, T	S	V	V	~	V	~	E, U, O	L: \$400-\$2,700
Systems International, Inc. (PSI) (800) 827-7482	InterRamp	I: 64K	Т	P	С	10 p.m. 8 a.m 10 p.m.	7 p.m. 9 a.m 7 p.m.	H, N, T	S	~	~	~	~	~	E, U, O	I: \$29/Unlimited for first 3 months;
	LAN-DIAL	A: 14.4K	Т	P	С	8 a.m	9 a.m 7 p.m.	H, N, T	S	V	V	V	V	V	E, U, O	\$2-\$3 thereafter A: \$275/Unlimited
	LAN-ISDN	I: 64K	T	P	С	8 a.m	9 a.m 7 p.m.	H, N, T	S	~	V	~	~	~	E, U, O	1: \$400
Southeastern Universities Research Association Network (SURAnet) (800) 787-2638	Internet Access	A: 14.4K L: 9.6K-45M S: 1.17K-45M I: 64K	OS, T	P, SL	С	24 hour	24 hour	H, N, T	A, S	~	~	~	~		U, O	A: \$245/Unlimited L: \$375-\$7,500 S: \$433-\$1,083
Sprint Corp. (800) 817-7755	SprintLink	A: 14.4K F: 56K L: 1.54M	OS, T	P, O	С			H, N, T	A	~	~	V	~		U, O	A: (3) F: (3) L: \$500-\$2,700
UUNET Technologies, Inc. (800) 488-6383	AlterNet	A: 14.4K F: 56K L: 1.54M	OS, T	P, SL, U	С	8 a.m 8 p.m.		H, N, T	A			V	~	~	E	A: \$250/Unlimited F: \$695 L: \$795-\$2,000

(1) Available with other optional services, such as ANS InterLock Service

(2) 14.4K comes with the dial-up access method.

(3) Vendor did not supply pricing information.

(4) \$392 for shared port access, plus 3 hours usage during business day and unlimited usage after business hours. \$500 for dedicated access, unlimited usage.

(5) Vendor did not supply hours.

FTP = File Transfer Protocol HTTP = Hypertext Transport Protocol ICB = Individual case basis

SLIP = Serial Line Interface Protocol SMDS = Switched Multimegabit Data Service

Continued from page 31

requirements and finding the IAP that can meet them all is a tall order. In evaluating IAPs, businesses need to examine the type of Internet connection each provider offers, as well as the access speeds, systems integration, security and customer service each offers.

THE IAP HIERARCHY

At the top of the Internet access hierarchy are the national IAPs, completely commercial entities that specialize in dealing with large, complex communications systems used by Fortune 500 companies.

Large firms planning to strategically capitalize on the Internet will find national IAPs, such as Advanced Network and Services, Inc. (ANS), Performance Systems International, Inc. and Sprint Corp., providing Internet connections in major metropolitan centers and direct links to international networks.

For example, national IAPs, such as Sprint, extend high-speed Internet connections to users just about anywhere in the U.S. Users simply connect to a national provider's nearest switching facility, which is often used to support users of its other services, such as voice links. The national IAP then routes Internet traffic across its own net work to a router with a connection into the rest of the Internet.

National IAPs offer very high speed connections to the Internet, up to the 45M bit/sec T-3 rate. But along with high-bandwidth connections comes the need for customer premises equipment that is complicated to configure and manage. This is where the systems integration and consultancy services of national IAPs could become a key criterion in the selection process. Nationals IAPs often provide the type of advice needed to make Internet connections easy, but that advice often comes with a fee attached.

Next down the hierarchy are the regional IAPs that were funded by NSF to provide and manage high-speed circuits among supercomputer sites and major universities. Among the regional IAPs are CERFNet, NEARNET and Midwestern States Network, Inc. (MIDnet). Regional IAP coverage is usually limited to a handful of contiguous states, but many of them can match national provider service levels.

Some regional IAPs are getting more aggressive about expanding their coverage areas. NEARNET, for example, announced two weeks ago that it is buying the San Francisco Bay Area Regional Research Network (BARR- Net). The purchase, taken in conjunction with NEARNET's announced intentions to spread coverage beyond New England into New York and New Jersey, shows that the regional IAP is spreading its wings into other IAPs' territories.

But for the most part, regional IAPs don't have the existing infrastructure the national providers have and, therefore, can't offer connections anywhere in the country. Instead, regional IAPs have Internet access points that are concentrated in their coverage area.

As regional IAPs come hunting for big-time game in the commercial sector, only a few will be able to match national IAPs' technical capabilities. CERFNet and NEARNET, for instance, match national providers by offering T-3 links and also stress strong customer support.

At the low end is an army of local IAPs, typically headed up by entrepreneurs or technical experts. Local providers offer low-speed service to users in confined areas, usually within a city or metropolitan area, by subleasing circuits from regional or national IAPs and adding their own application services and support on top of that.

Because local IAPs are not yet considered viable alternatives for users with enterprise-wide networks, they have been omitted from the Buyer's Guide chart on page 32. However,

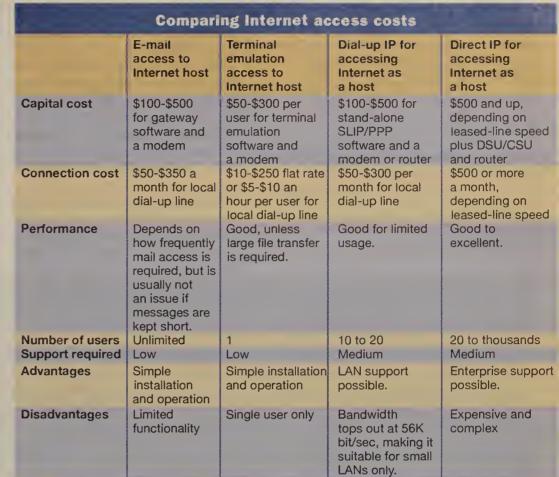
local IAPs are maturing in their technical and support know-how and may well become viable alternatives as early as next year.

All IAPs offer Internet connections that fall into one of two camps: direct Internet Protocoland non-IP-based links.

Direct IP links enable users to send and receive Transmission Control Protocol/IP traffic over the TCP/IP-based Internet. Some IAPs, such as ANS, the Committee on Institutional Cooperation Network, Inc. (CICNet) and UUNET Technologies, Inc., enable users to send and receive Open Systems Interconnection traffic over the Internet.

ANS offers gateways that encapsulate Novell, Inc.'s Internetwork Packet Exchange (IPX) and IBM's Systems Network Architecture traffic in TCP/IP for routing over the Internet. Advantis' Internet Interconnect for SNA Users service uses a gateway to enable SNA traffic to be routed across the TCP/IP-based Internet. CERFNet offers a similar service for routing Digital Equipment Corp.'s DECnet over the Internet.

Offering gateways that stuff non-IP traffic into IP packets for transmission across the Internet allows the Internet to be used as a transparent connection between non-TCP/IP systems. It also opens many possibilities for





Internet access providers

The Short List highlights services Network World recommends you examine during the Internet access provider (IAP) selection process. IAPs on The Short List meet the buying criteria outlined here and, in some cases, offer additional useful features. Those criteria reflect the needs of users with multivendor enterprise nets. Your criteria may differ.

National IAPs

9 9

■ Advanced Network and Services, Inc. (ANS) ANS Internet and WAN Connection Services

If experience is important to you in the selection process, ANS arguably has more of it than any other national IAP. ANS uses a T-3 backbone leased from telephone companies to provide a wide range of Internet connection options from 17 points of presence (POP) nationwide at up to T-3 speed. The IAP adds very strong security via its ANS InterLock Service that provides data encryption and user authentication, among other security features. ANS also has strong customer support and systems integration services that, among other things, help users build Internet access capabilities into desktop applications.

■ Sprint Corp. SprintLink

Sprint is rapidly expanding its Internet access services and becoming a force to reckon with as it launches a new service or access facility every few weeks. Already providing access from more than 400 POPs nationwide, Sprint recently announced that it will provide international Internet access to users in Europe and the Asia-Pacific region. Many regional and local IAPs are using SprintLink for 800-number access to their own services. With 800-number access, a user dialing in to a primary IAP is first connected to a Sprint switching facility, which routes the traffic over Sprint's network to the primary IAP's Internet access point.

Regional IAPs

■ California Education and Research Federation Network (CERFNet) CERFNet

CERFNet stands out for its sophisticated approach to customer service in which very knowledgeable technical staff quickly respond to user problems and queries. CERFNet was one of the first regional IAPs to cater to commercial users, and it continues to offer a wide variety of commercial Internet access options at up to T-3 speed in Southern California and Nevada. CERFNet also offers strong systems integration and consultancy services.

■ BBN Technology Services, Inc. NEARNET

NEARNET is right on par with CERFNet in offering very strong customer service and technical support. It too offers a wide range of connectivity options at up to T-3 speed. With the recently announced purchase of San Francisco Bay Area Regional Research Network (BARR-Net) and plans to expand its service area beyond New England into New York and New Jersey, NEARNET stands to quickly become a major competitor to national IAPs.

users willing to do some fancy footwork.

For instance, companies can route traffic destined for the Internet across internal backbone networks using an existing backbone protocol to a data center host that has a direct connection into an IAP. The user can then use an internal or IAP-provided gateway to convert that traffic to IP, which would then be routed across the Internet.

Passing traffic from a corporate backbone to a single Internet access point is quite complex, though. Users must have the technical knowledge to manage the bandwidth requirements of Internet traffic to avoid adversely affecting corporate backbone traffic. Users also need to be prepared to upgrade their backbones as more and more people cross the backbone to access Internet facilities.

With IP connections, any computer that a user links into the Internet can become an Internet host, which makes it possible for individual personal computers and workstations to become Internet hosts alongside the most powerful supercomputers.

Non-IP links require the use of terminal-emulation software that establishes a session with an Internet host, usually over a dial-up connection.

Selecting a provider solely based on the type of connection is really quite simple — either the provider has the type of connection you require at the speed you need or it doesn't. The real decision here is in choosing the type of connection you need. Choose the wrong type of connection and you will not be able to do exactly what you want to on the Internet.

IP connections can be established over leased-line or dial-up links. Non-IP connections are broken down into shell accounts and electronic mail-only connections accessed via dial-up links. Each connection type has its pluses and minuses (see graphic, this page).

IP LINKS

If the Internet is to be an integral part of your strategy and you need high bandwidth to support many users or data-intensive applications, you'll want a direct IP connection.

Direct IP connections based on leased lines start at 56K bit/sec and go up to the 1.544M bit/sec T-1 rate or even T-3. In some cases, direct IP connections can also be made over Ethernet, Fiber Distributed Data Interface or token-ring local-area nets. However, direct attachment to an IAP using LAN technology is usually only practical if the IAP and user are located on the same campus. IAPs generally offer such a service on an individual case basis.

Alternatively, several IAPs offer access over Switched Multimegabit Data Service (SMDS), frame relay or Integrated Services Digital Network circuits. These access methods can lead to significant cost savings, but availability is limited to the areas where the telephone companies make the services available to the IAP. The Buyer's Guide chart shows which access method each IAP offers.

Where only a few users — say, 10 to 20 — need Internet access, a dial-up IP connection operating at up to 56K bit/sec is very cost-effective.

A dial-up IP connection requires use of soft-

Up, up and

away

Internet traffic

grows at a rate

of about

15% per

month.

ware that supports the Serial Line Interface Protocol (SLIP) or its successor, the Point-to-Point Protocol (PPP), both of which enable IP to run over serial links.

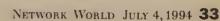
With direct and dial-up IP connections, Internet applications, such as Telnet and ftp, can be run on the user's desktop.

The next generation of Internet application suites running under Microsoft Corp.'s Windows is being rolled out by a half dozen vendors including

California Software, Inc., FTP Software, Inc., NetManage, Inc., Spry, Inc. and The Wollongong Group, Inc.

Many of the applications in these next-generation suites offer Dynamic Data Exchange (DDE) support for interapplication communications. DDE support lets users create a Word for Windows macro that can automatically log on to the Internet and pull down certain files from Internet hosts anywhere in the world directly into a Word for Windows document.

Continued on page 34



Finding more Internet access providers

Who to contact to receive information about local IAPs, which service one city, and to receive detailed data about other IAPs:

Information provider: InterNIC Telephone: (800) 444-4345 E-mail address: info@internic.net

Directions for downloading from the Internet: Use Gopher command to connect to the is.internic.net server. Select the directory Getting Connected to the Internet. Select Option 3 for U.S. Dial-up Service Providers, Option 4 for U.S. Dedicated Line Providers or Option 5 for International Providers.

Continued from page 33

Users with no need to establish their own Internet hosts can use a dial-up host account, also called a shell account, to hook into an Internet host using terminal-emulation software. Only keystrokes are sent to the host, while the screen updates are returned to the remote terminal. The typical terminal emulation used with shell accounts is Digital's VT-

Host accounts can be useful if you want to try out the Internet and see what resources are there and don't want to spend much money. But compared to direct IP links, host accounts offer a very limited environment.

For example, a host account precludes effective integration with desktop applications and only supports access via a character-based user interface instead of a graphical one, such as Windows or Apple Computer, Inc. Macin-

One of the greatest problems of a host account is that if you want to really use the Internet, you'll have to learn how to run Unixstyle, command line-driven utilities, which require a degree of user training.

The least sophisticated type of Internet connection is the E-mail only link, which requires users to simply dial into an Internet host that acts as a store-and-forward server for E-mail to and from Internet destinations.

The interface that the IAP host presents to the user may be via the Unix-to-Unix Copy Protocol (UUCP) or a gateway that coverts to a PC E-mail system, such as Novell's NetWare Message Handling Service (MHS) or to a mainframe system, such as IBM's Professional Office System (PROFS) or SNA Distribution Services.

The benefits of E-mail only connections are that they are simple to create, can be easily integrated into existing network systems, and have low buy-in, operation and support costs. The downside is that E-mail only connections are limited to noninteractive use of E-mail enabled services such as file retrieval, database searches and participation in discussion groups.

HERE, THERE OR EVERYWHERE

Once you settle on the type of connection you want, the decision comes down to whether to go with a national or regional IAP. The major difference between national and regional IAPs is in the number of access points they have available. This is relevant if your organization is geographically dispersed, as a national IAP has a wider coverage area.

Yet regional IAPs can match a national provider's coverage area by setting up agency service agreements in which a primary IAP sets up contracts with IAPs in other regions on your behalf.

The advantage of agency service agreements is that you are billed only by the primary IAP. Agency service agreements are offered by 11 of the 15 IAPs listed in the Buyer's Guide chart.

IAP provider

ANS

AT&T

Advantis

BARRNet

Services

CERFNet

Clark Internet

Global Enterprise

Northwest Academic

Computing Consortium

CICNet

Services

Services

SURAnet

Sprint

UUNET

Technologies

MIDnet

BBN Technology

But even national coverage doesn't mean that a connection point to an IAP, a point of presence (POP), is near to you. Some IAPs, such as AT&T and Sprint, have hundreds of POPs that give them truly national coverage. Other national IAPs — such as ANS, with 17 POPs are accessible only within major metropolitan areas. Regional IAPs tend to have even less POPs.

For companies with lots of mobile users, selecting an IAP that offers 800number access is an option. Using an

800 number means road warriors don't have to use different IAPs in different areas or make long-distance calls to a primary access provider. Another benefit to an 800 number is that users only need to remember one number to gain Internet access.

However, 800 access usually carries a significant surcharge over typical dial-up charges. The 800-number surcharge can be around \$10 an hour during peak hours. Some IAPs are even offering wireless access to the Internet but mainly as E-mail only connections (see story, this page).

SIZING THE PIPE

Next in the selection process, users need

Worldwide connections

There are now Internet hosts in more than 70 countries and on every continent, including Antarctica.



to know how to choose the type of circuit and speed that will provide for optimal performance.

For Internet access, performance is determined by the data transfer rate of the connection and the number of users sharing the link. For instance, choosing the correct access circuit speed has a

lot to do with how many users will be concurrently accessing the connection and what kinds of activities they'll be doing. If 100 users are accessing a Gopher server — software used to access collections of information on related topics from Internet hosts over a shared 56K bit/sec connection — they will usually see very good performance. If half of those users suddenly start file transfers at the same time, performance will quickly degrade.

During the past year, most IAPs have rolled out new or improved connectivity services. The trade-off, as always, is performance against cost. And, as always, the introduction of new, faster technologies generally drives prices down.

At one time, access was limited by the software and hardware that could be used with Internet connections. But the falling prices of

PCs and the explosion of commercial TC 1P application suites have made bandwidt ar more crucial than software or platforms to miting effective access.

All 50

States

All 50

All 50

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Calif. and Nev.

Calif. and Nev.

Ohio, Wis.

Okla., S.D.

Ore., Wash.

All 50

All 50

Conn., Maine, Mass., K

Northern N.J., N.Y., R.I.

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Md., Va., Washington, D

Ark., Iowa, Kan., Mo., N .,

Alaska, Idaho, Mont., N

Ala., Del., Fla., Ga., Ky.,

Md., Miss., N.C., S.C.,

Tenn., Va., W. Va.

Continental 48

Internet access providers' areas of coverage

Region

Nationwide

Nationwide

Nationwide

Northeast

Upper Midwest

Central east

Nationwide

Midwest

Northwest

Nationwide

Southeast

Nationwide

Nationwide

West

West

Service

ANS Internet and WAN

Connection Services

Internet Interconnect

Connectivity Options

Leased Line Access

Host Connection

NorthWestNet

Internet Access

InterFrame

SprintLink

AlterNet

for SNA users

AT&T Internet

Connectivity

NEARNET

CERFNet

ClarkNet

Service

MIDnet

Premier Internet

While E-mail is the mainstay of Intenet connections, a large number of IAPs are ow beginning to offer Internet services from leir own hosts.

Customers running the appropriate cent programs can access IAP host-based Go er servers — news servers that provide accord Usenet news groups — and E-mail servers at provide messaging services.

The availability of such servers is not rucial to the IAP selection process, but kno ng that an IAP can provide these services ald very well obviate the need for users to vild them on their own.

And a growing number of users are coing

Internet access for road warriors

Mobile computing is a way of life for many business professionals. If lugging laptops through airports, customer sites and hotels was not troublesome enough, trying to get an Internet connection on the road complicates matters. There are logistical problems if you have to use a different Internet access provider (IAP) in each city, and there is a great expense if you opt to make long-distance calls to a primary IAP.

There are two alternatives. The first is to select an IAP that offers access via an 800 number. The second is wireless connectivity to the

IAPs that provide 800 access often charge significantly higher dial-up access fees — typically \$5 to \$10 a month or more — than other IAPs. But the higher fee may be worth it because 800 service makes staying connected simple and straightforward. At worst, users may need to reconfigure their personal computer to dial 9 for an outside line from their hotel before dialing the 800 number.

While 800-number access is very handy for many business users, the truly mobile professional may not be near a telephone line at all. For people who work out of cars, trucks, trains, planes or other vehicles, wireless connections are required.

Wireless connectivity to the Internet can be achieved at several levels. Using systems such as RadioMail Corp.'s RadioMail or AT&T's PersonalLink, electronic mail to and from the Internet is simple. For these systems, a small transceiver is attached to the portable PC, while software supplies the user interface. The software and hardware combination costs around \$500, and service charges start at \$35 a month.

If you require access to Internet services that are more sophis cated than E-mail, such as remote logon via telnet, the emerging C lular Digital Packet Data (CDPD) technology will provide full int active access to an IAP. CDPD, a service that will allow packet data be transmitted over analog cellular networks, is still in its early da and analysts predict that national coverage won't be available un 1996. But in the few areas where pilot CDPD service is already avaable via E-mail gateways, prices are very attractive.

A few companies are shipping CDPD modems for both In Corp. microprocessor-based computers and Apple Computer, I Macintoshes. Current prices range from \$500 to \$2,000, dependi on the configuration and capabilities of the unit. One company sh ping CDPD hardware, Pacific Communication Sciences, Inc. of S Diego, offers both internal and external CDPD modules. The int nal module is being sold by IBM for its ThinkPad 750C.

CDPD is also being implemented in PCMCIA formats, and App is laying plans to produce CDPD-capable versions of its personal d ital assistant, the Newton.

Watch for new entrants and products in the wireless communitions market over the next 12 months. During this time, IAPs expected to begin selling complete packages of Internet service cobined with 800-number and wireless service support. The user be fits will be twofold: Mobile connections to the Internet will become easier, and increased IAP competition will drive prices down.

For an increasing number of people, their future with the Inter will be unplugged.

Tight security keeps lid on **Internet affairs**

Failing to ensure that your Internet access provider's (IAP) attitude toward security meshes with your requirements could make doing business on the Internet similar to flying without a safety net.

The first step is to gauge whether an IAP's security plan can meet the particulars of your business needs. For example, if you plan to use electronic data interchange over the Internet to exchange such information as purchase orders and invoices with your trading partners, can the IAP encrypt transactions?

If you believe an IAP is of the same mind concerning a strategy for securing Internet business transactions, it's time for the white glove test: Does the IAP run a secure site?

Providers that ensure logical security, such as account control for host, electronic mail and news accounts, often fall short when it comes to providing adequate physical site security. A truly secure site will have controlled physical access. This means that visitors must be escorted while in sensitive areas, doors must be locked, and the movement of materials such as tapes, disks and printed documents must be screened by a guard. A backup tape in the wrong hands could be more hazardous than intercepted communications or an intruder browsing your account.

Reliability is another crucial consideration. Beyond having experienced systems staff, a physically secure site and encryption services, an IAP needs a detailed security plan that includes security architecture documentation. Another good indication of an IAP's reliability is its willingness to sign an ironclad written contract stating the depth and breadth of security provisions.

And hand in hand with reliability planning goes systems maintenance planning. In addition to backup schedules, does the IAP have a restore plan? What is the IAP's timetable for completion of restore operations? For instance, if an IAP's plan gives an estimated maximum of eight hours to resume operations and downtime costs you \$1,000 an hour, then you need to assess whether that plan fits your business model.

You will need to take the above-mentioned checklist further, adding those security and reliability issues that are important to you — hire a systems professional if you need help identifying and assessing your particular security requirements. Then interview IAPs carefully to ensure that they take security as seriously as you do.

Lastly, make certain the service contract details specific security issues as well as the IAP's commitment to meeting those goals.

With 10 million to 20 million Internet users logging on daily, the security risks involved in conducting corporate affairs on the Internet are increasing.

to rely on a new generation of bandwidth-hungry Internet applications, which has direct performance implications.

Of the new software that is changing the way the Internet is used, few applications demand more bandwidth than Mosaic.

Mosaic, developed by the National Center for Supercomputing Applications, is a free graphical front end to the Internet that supports browsing of multimedia data that includes plain and formatted text, picture, video and sound. This data is based on a document format called hypertext.

Hypertext is a format for documents where

text or pictures can act as links to other places in the same or different documents. Moreover, the document a user points to on the receiving desktop could be on the same machine or on another computer elsewhere on the Internet.

Mosaic has become very popular and has resulted in an explosion of Internet sites offering sophisticated presentations of data, product literature and just about any other imaginable type of information.

Mosaic clients are currently available for Windows, Macintosh, the X Window System and many flavors of Unix. Mosaic has also been licensed by eight companies, including Quarterdeck Office Systems and Spry, for commercial implementation.

The impact on user sites can be tremendous. A 14.4K bit/sec connection that provides adequate response for 10 to 15 users running Gopher or accessing Internet news groups would be fine for a single Mosaic user. The same connection can be painfully slow with just two or three Mosaic users.

Marc Goodman, business manager for systems integrator NovX in Seattle, says, "The popularity of Mosaic is phenomenal with over 200,000 copies per month being downloaded.

Continued on page 36



Continued from page 35

This is driving a revolution in Internet use."

There's even a florist advertising and taking orders across the Internet through Mosaiccompatible data.

This means that the pressure is on for network managers to bring in faster links, for IAPs to provide better connection options and for IAPs to improve their infrastructures to meet bandwidth demands.

SERVICE AND SUPPORT

Just as critical is the need for service and support. A year ago, the customer service and support picture was very confused. National and regional IAPs in the past year have become much more aware of the need to provide customer service. With these organizations, you may well pay a premium price for installation — charges that range from 50% to 100% of the

However, for that price, you should get support, configuration and supervision of installa-

Most IAPs now offer 24-hour, 7-day-a-week customer support, although some have a hot line service in which customers can leave messages about problems and expect a callback within a specified time frame.

An IAP that can't deliver the type of support needed or can't restore lost Internet links in the time period required will hinder your ability to do business on the Internet.

Neil Villacorta, network manager and applied technology analyst at the University of California, Santa Barbara (UCSB), suggests that users get service and support commitments in writing.

Systems integration and consultancy are also services that most IAPs offer for direct or dial-up IP connections. These may be backed up by more extensive consulting services that can help users take the Internet down to the desktop.

Security is also becoming a cornerstone of service (see story, page 35). Pushpendra Mohta, CERFNet's director of engineering, describes the regional IAP's security offering as turnkey service.

"The customer doesn't have to see the router vendors, the modem vendors or the telephone company," he says. Rather CERFNet takes care of all aspects of getting users connected, he adds.

Many IAPs also offer security consulting and some offer specific security services. For example, NEARNET offers consulting services that include the development of fire wall protection, which enables users to filter which type of Internet traffic is allowed to flow into and out of sites.

Data encryption is also available on many networks, including AT&T's Internet Connec-

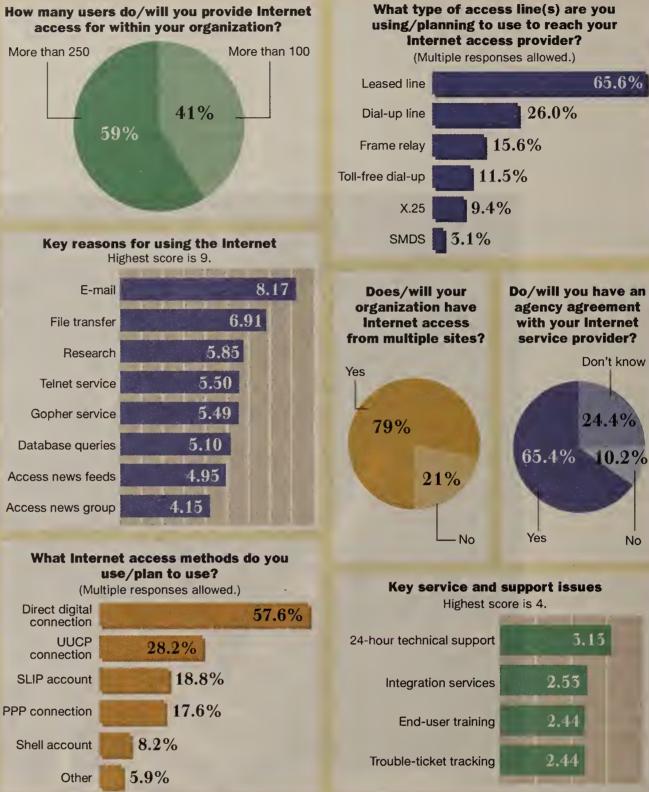
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Reader views on Internet access providers

Based on 100 interviews.



getting full access. "

What are the

capabilities/

services you want

from your Internet

access provider

that are currently

unavailable?

connection into

the Internet. ""

66A Windows-

based way to

Internet rather than DOS

access [the]

prompts. ??

66 ISDN to

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66_{ATM}. ??

66 Video

broadcast

and video

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66 In remote

get enough

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documentation

problems. That

keeps us from

or help with our

the desktop. "?

areas. ""

⁶⁶A wireless

Focus Data, Inc., an independent market research firm in Framingham, Mass., conducted the survey. Focus Data specializes in gathering primary data from end-user organizations regarding their enterprise network environment and needs. For more information on Focus Data services, call Mona Dabbon at (508) 626-2556.

tivity Options, Sprint's SprintLink and BARR-Net's Premier Internet Connectivity service. User and host authentication services are also available from most IAPs.

PRICING

Pricing of Internet access varies enormously both in structure and actual costs. Pricing usually includes an initial start-up fee, which may cover installation and configuration. Most dial-up services have a onetime setup fee that ranges from \$50 to several hundred dollars, while the installation charge for leased-line services is in the thousands of dol-

After the start-up and installation costs, there are flat-rate monthly charges and hourly charges. Flat-rate charges can apply to all types of access and enable users to send as much data as they can for one fee. Leased-line charges may also include a per-mile charge, while many IAPs charge a basic flat fee plus a perhour usage fee for dial-up service.

UCSB's Villacorta says the university will only accept flat-rate pricing. This pricing type makes UCSB's Internet access a cost of business for the school overall, rather than a cost to individual departments that is charged back.

Most IAPs charge high installation fees to cover administrative costs incurred in dealing with the telephone company for circuit setup and configuration. CERF-Net charges \$4,000 to set up a T-1 connection, which is \$1,400 more than the telephone company's charge.

The newer technologies tend to be attractively priced. Again, looking at CERFNet's pricing, SMDS' setup costs \$2,500, which is only \$700 more than what the

phone company charges for the same circuit.

THE FUTURE

In the next 12 months, watch for the explosion of IAPs at the local level to continue and bring with it continued pressure to reduce con-

You can send E-mail to the president and vice president at president@ whitehouse.gov services. and vice.president @whitehouse.gov. You can also send E-mail to socks@



GRAPHIC BY SUSAN SLATER nection costs. As local IAPs install more POPs to serve a wider area, expect the distinction between regional and local IAPs to blur. Also watch for local IAPs to offer more sophisticated customer and technical support

As enhanced services, such as end-to-end data encryption, notary public-type services to register contractual exchanges, and security services mature, so will using the Internet for business purposes. And as business use of the Internet increases, it will become as fundamental to conducting business as the telephone.

Gibbs is a consultant and writer in Ventura, Calif., and author of the book Navigating the Internet, published by Sams Publishing. He can be reached at (800) 622-1108, Ext. 504, or on the Internet at mgibbs@rain.org.

Help desk

Continued from page 2

tended, automated backup and recovery; and client data compression support. Pricing for NetWorker 3.0 is \$750 per server. For more information, call (415) 812-6001.

Emerald Systems Corp.'s XpressServe is an NLM that supports NetWare 3.X nets, and XpressServe Enterprise supports NetWare 4.0. XpressServe lets users group and label files by logical criteria, such as all of the firm's accounting files, even if they reside on different servers. Both products support Adaptec and Emerald Systems SCSI controllers and a wide range of 1/4-inch, DAT and 8mm tape drives. XpressServe also supports high-performance drives such as the new digital data storage (DDS-2) DAT that enable data transfer rates of up to 60M bytes/min. For more information, call Emerald Systems at (800) 767-2587.

In addition to those products listed in The Short List, you may want to consider Arcada Software, Inc.'s Backup Exec, a client/server data management product that includes tools to back up, restore and groom the data on NetWare servers and workstations. Backup Exec is compatible with NetWare 3.X and 4.X. It supports DC6000, DAT, 8mm, cassette and DLT storage devices. Backup Exec for NetWare Enterprise Edition provides server-based backup for an unlimited number of servers for \$995. Backup Exec for NetWare Single Server Edition, which supports as many as 25 Net-Ware users, costs \$395. For more information, call Aracada Software at (800) 327-2232.

For more information on LAN backup systems see "What a difference a year makes," *NW*, Feb. 14, page 45.

Our company uses Hewlett-Packard Co. HP 9000 Series 382s and an assortment of Apple Computer, Inc. Macintoshes, and in the near future we'll be acquiring HP 9000 Series 745s and 800s. How do we get the HPs to emulate Appletalk/Ethertalk services? Are there any packages that will allow the Macintoshes to mount AppleShare volumes from the HPs and use their print services?

Joseph Baum, Libertyville, III.

Kee Nethery, engineer at Kagi Engineering, a Berkeley, Calif., consulting company and organizer of the Mactivity Trade Show replies:

You might want to check out Helios USA's EtherShare, Pacer Software, Inc.'s PacerShare and Xinet, Inc.'s K-AShare - Unix-based AppleTalk File Protocol (AFP) server and print spooling software that currently support HP 9000s. These products will allow Macintoshes with an AppleTalk connection to attach to these AFP servers as though they were Macintoshes running AppleShare.

EtherShare runs on the HP 9000 Series 700 and 900s. Pricing for EtherShare starts at \$4,300 for a 20-user license. For more product information, contact Helios USA at (408) 864-0690 or via the Internet at sales@helios.com.

PacerShare runs on the HP 9000 Series 700 and 800s (and the Series 300s if they run HP-UX9.0 or greater). Pricing for PacerShare, which includes the print spooling software called PacerPrint, starts at \$3,000 for 20 users. For more product information, contact Pacer Software at (508) 898-330 or via the Internet at marketing@pacersoft.com.

K-AShare runs on the HP 9000 Series 300, 400, 700 and 800. Pricing starts at \$595 for a two-user license. For more product information, contact Xinet at (510) 845-0555 or via the Internet at sales@xinet.com.

Letters

Continued from page 29

of people (there is speculation that some may actually be machines who are responsible for the continued existence of the Internet. There are many hackers who have never even seen the Internet, though there are probably few net.gods who have never written a hack. Much of the Internet software, for that matter much of Unix, is or was a hack.

Crackers are the nefarious characters who break into systems. They do this by making cracks — openings into a system, encryption standard or software copy-protection scheme. These are the same types of people who write viruses for kicks, because they can do "really neat stuff'' — at least in their world view.

Wizards and gurus already exist, the main difference between them being that gurus tend to share their knowledge more freely and tend to try to demystify that which the wizards try to keep to themselves.

The term which I have most frequently heard to describe the people whom Gibbs seems to be referring to may be "chiphead," a

pejorative in the sense of gearhead for motor aficionados, yet endearing to some. Or one could use one of the less catchy phrases, such as software engineer, programmer, systems analyst or network supervisor.

Nicholas Bernstein Vice president CaddPLUS Milwaukee

The facts on FIRP

I continue to be upset with your reporting on the Federal Internetworking Requirements Panel (FIRP) (June 13, page 4).

The problem is not that your writers get the facts wrong; the problem is that they don't report all of the facts. The articles that your newspaper has chosen to print lose much of their significance when you publicize the fact that the panel does not have the authority to make most of the recommendations contained in its report.

The FIRP was chartered to address technical issues. It created a political report. The panel's charter was never changed — I verified that fact with phone calls to the National Institute of Standards and Technology and the FIRP chairwoman's office. The panel blatantly exceeded its charter in producing the report it

Several weeks ago a White House aide was fired for a \$4,000 unauthorized helicopter ride to a golf course. A \$4,000 abuse is trivial when you consider the hours that FIRP members spent discussing topics outside their chartered area of responsibility and the costs for printing and distributing a report that essentially ignores what the panel was formed to do.

If your reporters were covering the White House aide story, they would inform your readers of the aide's score for his round of golf. Please invest the time to write a story about the FIRP — not the panel's unauthorized, headline-grabbing recommendations.

> Gary Workman Staff development engineer General Motors Corp. Warren, Mich.

Editor's response: Earlier this year, Mr. Workman wrote an opinion column concerning the FIRP's violation of its charter (March 21,

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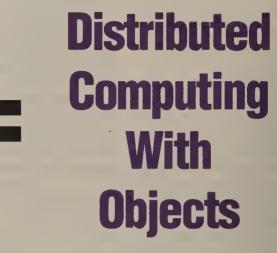
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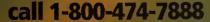
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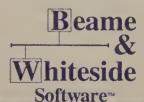
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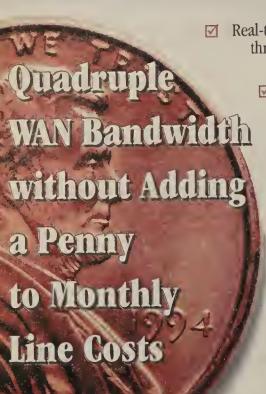


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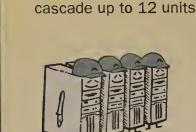
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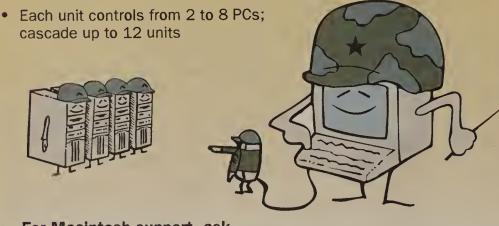
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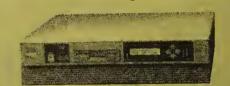
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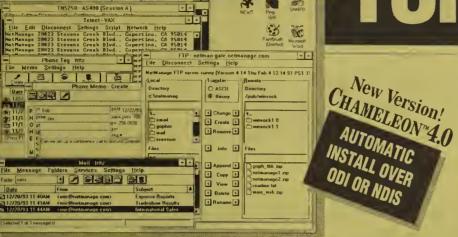
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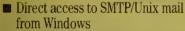
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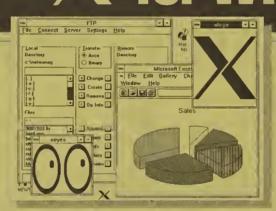
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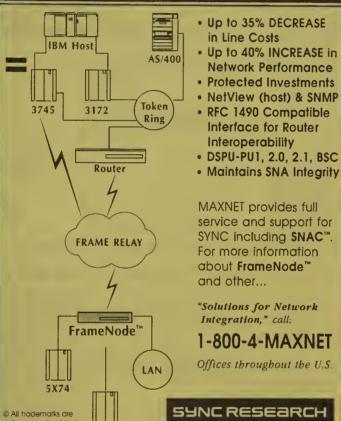
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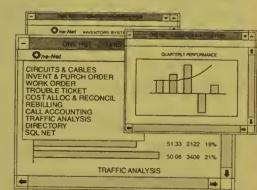
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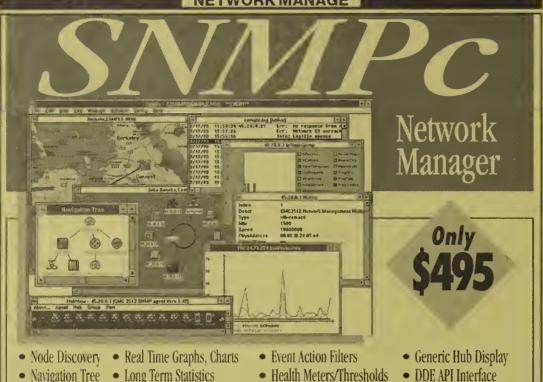
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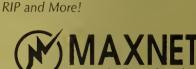
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IBM shoots for leadership in ATM market

BY MICHAEL COONEY

Bosto

If IBM is to be successful with its far-reaching ATM strategy, it must win over a skeptical user base and fight voracious competitors in unfamiliar territory while rolling out products at a market-leading pace.

Not a job for the faint-hearted.

"We know...how well we are positioned against the competition and are very confident we will be able to assume a leadership role in the ATM market," said Ellen Hancock, general manager of IBM's Networking Systems and Software Solutions groups. "We think we have the killer instinct we'll need to obtain marketshare."

IBM took the first steps toward that end last week by rolling out its Nways BroadBand Switch, Broad-Band Network Services (BBNS) software and a variety of other Asynchronous Transfer Mode products that span the enterprise from the desktop to the wide area (see story, page 13).

Analysts say IBM is well positioned from both a technical and price perspective to make its multiyear, \$200 million ATM investment pay off, but users are far more skeptical.

NOT THE CHOICE VENDOR

'IBM would not be our vendor of choice when it comes to ATM products,' said Chris Reese, manager of the network engineering group for the California State University, which is setting up a wide-area ATM testbed. "We don't think IBM has the overall experience to handle a complete end-to-end, switch-to-adapter solution."

According to analysts, IBM faces its strongest competitive challenges on the high-end wide-area net switch side from Newbridge Networks, Inc., Fujitsu, Ltd. and AT&T, but they expect that IBM's BBNS software will give its Nways switches an advantage.

From Day One, BBNS will provide advanced dynamic bandwidth allocation, flow control, class of service and prioritization. Newbridge, AT&T and Fore Systems, Inc. are closest to IBM in terms of tack-

ling those issues, analysts said, but they still give IBM the nod.

"The ability that IBM's BBNS has to control cell and variable-length packets puts it ahead of all the vendors at the campus level," said Dave Passmore, president of the Decisis, Inc. consultancy in Herndon, Va. "Plus, users can scale the hubs to switches and then scale the switches; other vendors have limited scalability."

Passmore added that BBNS will give users at least five transport options, such as broadcast and multicast modes. "Other vendors are limited to one type of transport mode," he said.

Nick Lippis, president of Strategic Networks Consulting, Inc. in Rockland, Mass., agreed. "IBM's clear advantage is that they have a complete campus-to-wide-area solution with a well-developed control mechanism — BBNS — that no one, with the possible exception of Newbridge, can even come close to," he said.

FIGHTING WORDS

According to Tom Nolle, president of the CIMI Corp. consultancy in Voorhees, N.J., IBM's pricing will make it attractive in the campus or local net switch market.

"Unless the Newbridges and SynOptics of the world don't lower their prices almost immediately, they will give up the ATM desktop to IBM," he said.

For example, Newbridge's VIVID Ridge line of ATM products begins with 51M bit/sec ATM adapters priced at \$1,000 to \$2,500. IBM said its similar adapter will run about \$800 and its 25M bit/sec ATM adapters are selling for as little as \$395 in groups of five.

Nolle said IBM's per-port fee to the concentrator and hub could get as low as \$300 to \$400, whereas Newbridge's pricing runs about \$500 to \$900 per port.

"ATM was always dismissed in the past because it was pricey, but IBM has fixed that," Nolle said.

Users, however, are still not convinced. "Price is important, but we will need to know that this ATM equipment is reliable and functional," said James Karrington, director of WAN engineering with the Social Security Administration's office of telecommunications in Baltimore.

Comments?

See "Contacts" box on page 2.

Putting its Hancock on ATM

IBM will stop at nothing to get its Asynchronous Transfer Mode (ATM) products firmly entrenched in the enterprise — even if that means stepping on

its existing product lines.

Ellen Hancock, general manager of IBM's Networking Systems and Software Solutions divisions, said IBM is willing to let its ATM campus products announced last week cannibalize sales of Token-Ring local-area network products if that is what's required for ATM to succeed. As one indication of that willingness, IBM has priced its 25M bit/sec ATM adapter at almost \$200 less than its Token-Ring boards.

"We will not hold back ATM devel- IBM's Ellen Hancock opment and roll out for the sake of Token Ring," Hancock said.

Separate

But, she added, "We are also looking to enable our existing legacy equipment to access the ATM environment as possible."

ATM could also mean an elimination of the router role in enterprise environments.

"As ATM rolls out, we see a diminished roll for stand-alone routers," she said. "Their function will

be built into the switch."

At an industry roundtable held here for press and analysts, Hancock also said IBM was focusing

on reducing the number of brands and consolidating product functions throughout her units — which have a combined annual revenue of \$8 billion to reduce overlap and product confusion for users. She was not specific about which products had or would be eliminated because the effort is ongoing.

IBM has been criticized by users for offering too many overlapping or conflicting product lines, which, in turn, has led to user frustration (NW, June 13, page 49).

Separately, Hancock said IBM just completed its first Networking Systems layoffs. About 300 people ended up being laid off or taking early retirement, she said

"The layoffs were based strictly on job performance — it was not a surplus [cutting] action," Hancock said.

BY MICHAEL COONEY

House

Continued from page 1

Tele-Communications Association, Inc. (TCA).

"The Senate members are really wondering which way to weigh in on these bills," Linder said. Since it is rare for actual users to lobby Senators, Linder said their opinions could carry significant weight.

Many users are not inclined to go to that extent, however.

"I don't see a lot of people talking about it over dinner, to be perfectly honest with you," said Ray Meyers, MIS director for Eclipse, Inc. in Rockford, Ill., who runs a frame relay network provided by Sprint Corp.

Others favor telecommunications reform in general but urge restraint in granting too many concessions to the RBHCs until there is real competition in the local loop.

"The passage of these bills is either indicative of a harmony we've never seen before in the House or a failure on its part to understand the issues and importance of what it's voting on," said Phil Evans, director of telecommunications at Perot Systems, Inc. in Dallas and a member of the International Communications Association (ICA) user group.

"How do you control the local phone company in a competitive environment when they really have no competition? Hopefully, the Senate will be more responsible," he said.

Added Ron Barnes, assistant vice president of Bank of New York, "I don't think we need any more competition." The bank already runs government securities accounts over leased lines from two carriers — giant MCI Communications Corp. and upstart LCI International, Inc., he said.

NEED FOR COMPETITION

Sen. Fritz Hollings (D-S.C.) said he is not so sure there is a dire need for more competition in long-distance, either

His Senate version of the telecommunications reform bill would impose a much tougher standard for RBHC entry into long-distance than the measure passed by the House, requiring effective competition in the local loop first.

If the Hollings bill clears the Senate, a House-Senate conference committee will have to hammer out a compromise between the various legislative proposals. Both legislative bodies must then approve that compromise before the president signs it into law, which he is expected to do.

Al Bieber would like that just fine. The president of the Communications Managers Association said that with the Big Three carriers in lockstep on rates, letting the Bells into the market might break their stride and make for a livelier market. Also, with competitive access providers sniping at the RBHCs, the Bells should be allowed into new markets, he said.

Todd Ouellette, director of information systems for Rapid Design Services, Inc. in Grand Rapids, Mich., also favors RBHC entry into long distance but is not convinced that added competition will benefit the local loop.

"If you get a lot of competition, you're going to see service degrade for the benefit of pricing," he said.

the benefit of pricing," he said.

Freeing the RBHCs and cable TV companies "could be good as long as competition doesn't get so crazy that no progress is made," agreed Lee Nolan, senior telecommunications engineer at The Travelers Companies in Hartford, Conn. "With too many players participating in too many businesses, there is likely to be chaos."

Learn more about it

The TCA has a hot line that offers a two- to three-minute summary about the status of regulatory and legislative concerns: (202) 429-4295.

A second hot line connects TCA members to Jeff Linder, who is tracking the legislation for the group: (202) 429-7384.

Users can download text of the bills under discussion via various on-line services. Those with current versions of the bills available on-line include:

- ✓ Congressional Quarterly, Inc.'s Washington Alert: (800) 432 2250, Ext. 366 ✓ Legi-Slate, Inc.'s LEGI-SLATE:
- (800) 733-1131 ✓ Mead Data Central, Inc.'s LEXIS: (800) 227-4908

Pro or con, the best tactic for users who want to make their opinions heard is to work with constituent relations offices on Capitol Hill to directly lobby Senate Commerce Committee members, advises Brian Moir, ICA's Washington representative.

While individual users may want to lobby Senate members directly, user associations have traditionally worked with congressional staffs to shape legislative proposals. However, that lobbying has been curtailed this year by changes in the tax laws that bar deductions for lobbying expenses.

Those tax law changes have kept the TCA on the sidelines so far, Linder said. The association plans to wait until the House and Senate draft a compromise bill before speaking up, according to Bob Wallcliffe, TCA's vice president of

regulatory affairs.

In contrast, the ICA has been working with Capitol Hill staff members for some time. During the past few years, the ICA has helped shape the proposed legislation on a number of fronts, including backing provisions for the protection of customers' proprietary network information, according to the ICA's Moir. The association will work with Senate Commerce Committee members during the next few weeks to ensure those protections remain intact, he said.

Those next few weeks should prove decisive for the proposed legislation. Following the Fourth of July recess, Congress will return to business on July 11, after which it will have approximately three and a half weeks to get the Hollings bill out of committee and to the Senate floor for a vote, Moir said. Z

Messaging

Continued from page 1

conjunction with the new workgroup messaging product, Sullivan said.

The document management product will integrate the capabilities of IBM's Visual Document Library document management product, Visual Info application development tool, imaging software, and the Book Manager document distribution and publication tool. The work flow package will be based on the firm's FlowMark software, but it will also include data access and project management components.

The workgroup communications package will revolve around UltiMail, a multimedia-enabled Email package that provides native Internet support through Transmission Control Protocol/Internet Protocol and Simple Mail Transport Protocol. UltiMail enables users to tag multimedia attachments to electronic messages using the Multi-purpose Internet Mail Extensions protocol.

The OS/2-based UltiMail was introduced in March as a TCP/IP message system. Since then, IBM has added an X.400 message transport and X.500 directory services, and has ported it to the Application System/400. IBM also announced plans to port it to AIX.

PRODUCT COMPATIBILITY

The new workgroup product will also be compatible with Lotus' Vendor Independent Messaging and Microsoft's Messaging Application Programming Interface. The calendaring and scheduling components will come from IBM's Time and Place/2 offering. The workgroup elements will come from its Person-to-Person chalkboard and videoconferencing

Most of the new product will rely on existing IBM technology, but it will be integrated tightly and pack-

aged as a single system, Sullivan said.

IBM will begin beta tests of the new product in August, Sullivan said. The first customer release is due by year end and general availability is slated for next March, he said.

The software will run initially on OS/400 and OS/2 servers with OS/2 and Windows clients.

IBM will release a server version for AIX about 90 days after the general release of the OS/400 and OS/2

David Ferris, president of the Ferris Networks Email consultancy in San Francisco, said IBM might be able to hold onto some of its existing OfficeVision and PROFS customers by rolling out the new product. But he doubted they would be able to penetrate the market already dominated by vendors such as Lotus and Microsoft.

Attachmate Corp., Microsoft and WordPerfect Corp. already offer gateways, however, that give hostbased messaging users a way to migrate to workgroup systems, Ferris said.

IBM's new product will use existing IBM gateways to integrate with mainframe-based calendaring, scheduling and E-mail systems. It will provide twoway access for functions such as scheduling queries,

"The industry really needs a solid migration path from the PROFS world, so anything IBM does to facilitate this is good news," said Gary Rowe, a principal at consultancy Rapport Communication in Cincinnati.

Other observers said IBM may not come out with its messaging system in time to keep existing users from departing or to attract new customers.

"I think it's a little late for IBM to be coming out with a first-generation [client/server] E-mail and groupware product. Many PROFS customers have already migrated to client/server groupware," said Jamie Lewis, president of The Burton Group, a consulting firm in Salt Lake City.

Senior Writers Barb Cole and Adam Gaffin

Notes

Continued from page 1

ing Group, Inc. in Andover, Mass.

Ford questioned how much demand there would be for Lotus class libraries, due to announcements in recent months by third-party vendors of applications that give developers similar capabilities. For example, both Edge Research, Inc. of Portsmouth, N.H., and Brainstorm Technologies, Inc. of Cambridge, Mass., now sell tools that let developers use Microsoft Corp.'s Visual Basic to create Notes applications.

Lotus itself last week formally introduced Notes Visual Programmer (ViP), a graphical tool for creating alternate user interfaces for Notes clients and for building applications in Notes.

ViP can also be used to create reports and charts based on Notes databases. Pricing for the product, initially available only for Windows, costs \$995 per license (NW, June 27, page 37). Lotus also released NotesSQL, a series of Open Database Connectivity drivers that let outside applications access Notes databases via SQL queries. NotesSQL is a free add-on to Notes (NW, May 30, page 3).

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Vendors turn to power of

multiprocessing machines

Some of the biggest names in the database industry last week announced

At the Database & Client/Server World conference here, IBM said it will add

Pricing for the new database software starts at \$425 for a single-user license

Also at the show, Oracle Corp. and Digital Equipment Corp. announced

plans to port Oracle's database onto clustered systems based on Digital's Alpha

AXP processors running the OSF/1 variant of Unix. The goal, the companies

said, is to create powerful multiprocessing systems for companies seeking to

Digital clusters and will include Oracle Backup/Restore for Digital's Polycenter

NetWorker and an Oracle server and network manager integrated with Digi-

companies said they will release applications for high-volume transaction pro-

Many other vendors made announcements at the show, as well, including:

■ Sapiens USA, Inc. of Research Triangle Park, N.C., demonstrated its Object-

Pool tool for accessing mainframe data from within client/server nets. The tool,

based on IBM's implementation of the Common Object Request Broker Archi-

tecture, will let users encapsulate mainframe data so it can be manipulated with

object-oriented client/server applications. Shipping is expected in December,

■ Sterling Software, Inc. of Woodland Hills, Calif., announced a new version of

its Answer: Journey data access software. Version 2.0, available this summer,

lets users on Windows clients access data on maintrames, servers and desktop

databases, and adds a report writer. Pricing will range between \$42,000 and

■ Unisys Corp. of Blue Bell, Pa., announced that it had ported its Linc Environ-

ment development tool kit to Sequent Computer Systems, Inc. and Sun Micro-

systems, Inc. Unix platforms. Linc Environment is designed for building on-

line transaction processing applications and lets developers incorporate

two-phase commit operations. Pricing starts at \$12,500 per developer, with

run-time versions for as many as eight users starting at \$2,400. The Sequent ver-

sion is available immediately; the Sun system is expected in the third quarter.

cessing, as well. Initial deliveries of products are expected to begin in 1995.

The new offerings center on Oracle's Parallel Server technology running on

Although initial offerings will center on decision-support applications, the

supplement legacy databases in a client/server environment.

plans to kick up the power of their products with the help of multiprocessing

support for symmetrical multiprocessing in the OS/2 version of its DB2 data-

base. The move should boost performance of DB2/2 when it is run on an OS/2

"Visual Basic is a pretty good application development tool, at least for getting applications up quickly," Murphy said.

In addition to Lotus, a number of vendors used last week's Database & Client/Server World conference in Boston and the PC Expo show in New York to announce Notes development tools, along with other Notes applications. They include:

Application Partners, Inc. of Iselin, N.J., announced Version 3.0 of its Wit API Library for building applications within Notes by using code bundles based on the Notes API.

Pricing for the new version, to ship in August, will start at \$3,995 for a developers'

Application Partners: (908) 603-7742.

■ Edge Research said its new HiTest tool set lets developers use Visual Basic to build Notes applications, as well as links between those applications and third-party pro-

Pricing starts at \$1,995 for a 100set site license.

Edge Research: (603) 431-5300.

Folio Corp. of Salt Lake City said it is working with Lotus to link Folio information databases with Notes applications and expects to ship the software to do this by the end of the year.

Folio: (800) 543-6546.

■ KnowledgeWare, Inc. of Atlanta announced versions of its Object View development tool kit and ClearAccess query tool that will work with NotesSQL.

Pricing starts at \$3,200 for an enterprise version of Object View and \$460 for Clear Ac-

Knowledge Ware: (404) 231-3510.

PC Docs, Inc. of Tallahassee, Fla., said it would integrate its PC Docs Open document management system with Notes. This will include a new application called PC Docs Interchange that will let users find documents stored in non-Notes databases.

PC Docs: (904) 942-3627.

Revelation Technologies, Inc. of Stamford, Conn., said that this month it will betatest a Notes version of its OpenInsight transaction processing development suite.

Revelation: (203) 973-1000.

API avoidance

Non-Lotus products that will help insulate developers from the Notes API:

Brainstorm

VB/Link for Notes Visual Basic-based

Edge Research

HiTest line of development tools

Percussion Software, Inc.

Notrix development tool kit

Powersoft, Inc.

PowerBuilder class libraries for Notes

Trinzic Corp.

Info Pump and Forest and Trees

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BY ADAM GAFFIN

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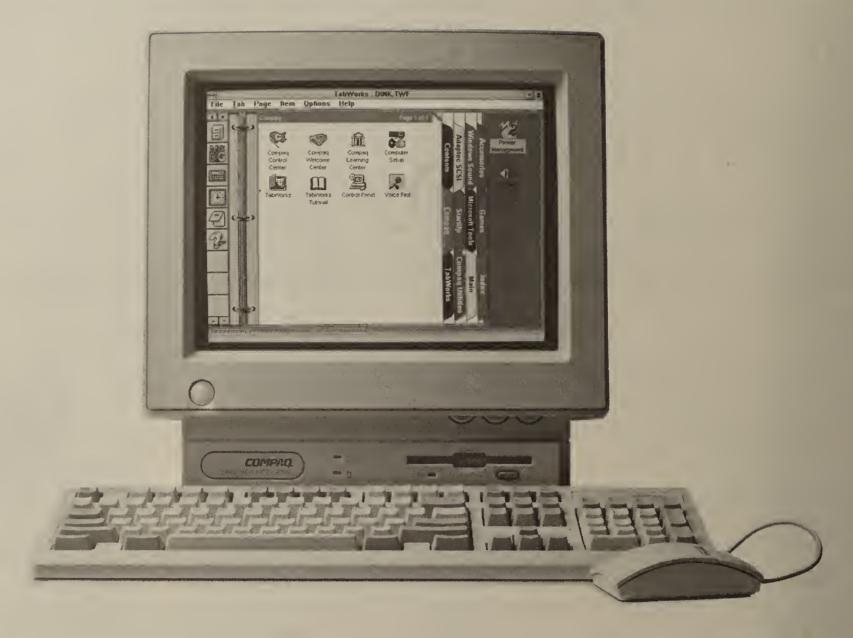
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